NoiseKen®

INSTRUCTION MANUAL

VDS-2002
PC Remote Control Software

MODEL 14-00036A

NOISE LABORATORY CO., LTD.

Edition 1.04
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   Please ensure that individuals who use the Software have received the appropriate training and practice with regard to the entire system in which the Software runs, including the usage environment, equipment safety, and operating methods.

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   As a rule, one set of this product shall be purchased for one computer, and therefore, one set of this product shall be installed on one computer only.

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   The usage period designated by NoiseKen shall take effect when the installation of the Software or the prescribed procedure for use, whichever is later, has been completed by the Customer, and the Customer's right to use the Software shall be deemed to have expired at the end of this usage period.

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   (2) Any form of reverse engineering, including decompilation and disassembly, of the Software
   (3) Reselling, transferring, redistributing, licensing, etc. of the Software, or the accessories provided by NoiseKen for the Software, to third parties
   (4) Storing the Software, or the information, documentation, and the like provided by NoiseKen for the Software, on a network in a state wherein it may be conveyed to a third party

10. Handling of USB and other protection keys
    The software provided by NoiseKen may require USB or other protection keys.
    (1) If a protection key is included in the accessories, the protection key must be mounted in the computer where the software is used.
    (2) As a general rule, the protection key is not reissued. In the event that the protection key is damaged or lost, please contact the NoiseKen Sales (or Repair) Division.

2. IMPORTANT SAFETY PRECAUTIONS

This product is the software to remote control the VDS-2002 Voltage Dip and Up Simulator. Thoroughly understand the following precautions before use, as they are important matters for handling this product in safety. Thoroughly read this manual and also the instruction manual for the VDS-2002 simulator before using this product.

1. **Incorrect or careless operation could result in a fatal injury.**
2. **This unit cannot be used in an explosive area, fire prohibited area, etc. Use of this unit in such an area is liable to cause combustion or ignition.**
3. **Avoid use in locations exposed to high humidity and large amounts of dust.**
4. **A person who has a pacemaker on should not operate this unit and also should not enter the area where it is operating.**
5. **As the connection concerned, be sure to connect after turning off the power supply of the PC installed this software, VDS-2002, and equipment under test (EUT) and confirm no power supply of them. Otherwise you may receive an electric shock.**
6. **Do not turn the power of the VDS-2002 OFF, and do not unplug any connecting cable while the control software is running. PC may become unstable or the operating system may malfunction. Be sure to close the control software before turning the VDS-2002 power OFF.**
7. **Before you run the software of this product, close all other application software.**

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4. INTRODUCTION

4.1. Introduction

We thank you for your purchase of Remote Control Software for Voltage Dip and Up Simulator VDS-2002. Thoroughly understand the contents of this manual and use as ready reference for operation. In this manual, two marks are distinctively used, < > means buttons and [ ] means other names and messages shown on screens.

- **This Instruction Manual will help operators handle and utilize safely and efficiently the Voltage Dip and Up simulator VDS-2002 and Control Software.**
- **Keep this Instruction Manual in a place where it is readily available.**

4.2. About this product

This product is the dedicated control software program for NoiseKen VDS-2002 Voltage dip and Up Simulator conforming to the IEC61000-4-11 standard test routine, and with this software, VDS-2002's function will be more variously performed, controlled, and completed.

4.3. Product features

- Controls the VDS-2002 by your PC.
- Preprogrammed test routine as per the IEC 61000-4-11.
- Wider parameters setting than local mote and sequential operation up to 10 steps
- Parameter settings saving and recalling for standardized testing.

5. INSTALLATION AND START

5.1. Installation

(1) Installing the program

① Log on with the ID that has Administrator privileges for Windows.
② Insert the set-up CD into the CD-ROM drive, and select the [Japanese] folder in VDS-2002 folder when Japanese version of OS is used or the [English] folder in VDS-2002 folder when English version of OS is used
③ Double click on Setup.exe in the folder.
④ The software should automatically start installing. Follow the set-up instructions given on the screen.
⑤ Checking the installation

[Windows 10]

After the installation process is complete, the [VDS-2002] program is registered to [NoiseKen] in the All Apps list under [Start] in the taskbar.

This completes the setup of the software.

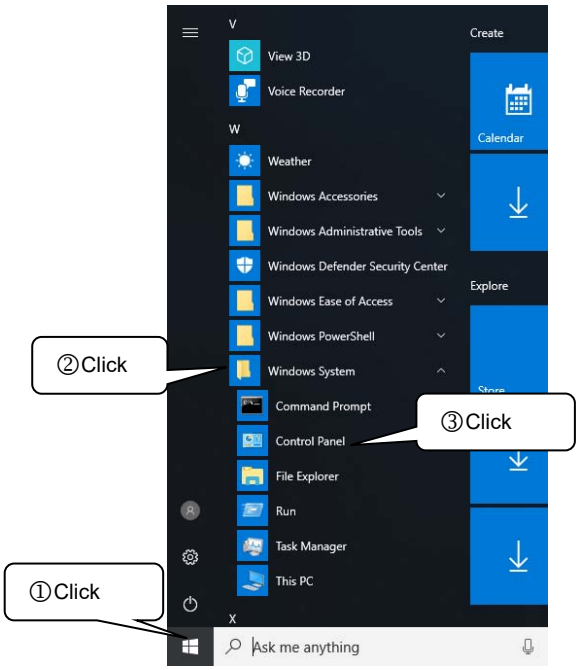
(2) Installing the driver

The driver must be installed to run this software.

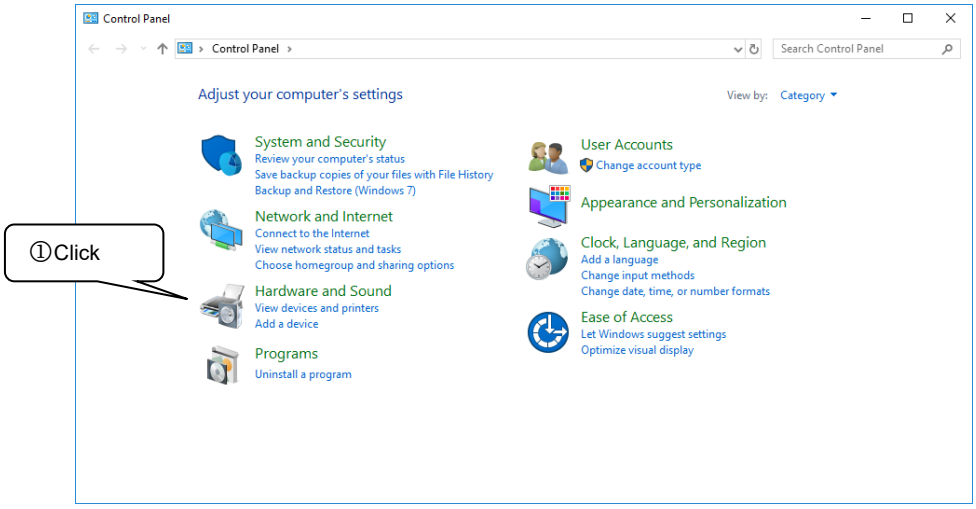
① Log on with the ID that has Administrator privileges for Windows, and insert the setup CD of the optical interface unit into the CD-ROM drive.
② Connect the optical interface unit to a USB port of the PC.
③ Open Device Manager..

[Windows 10]

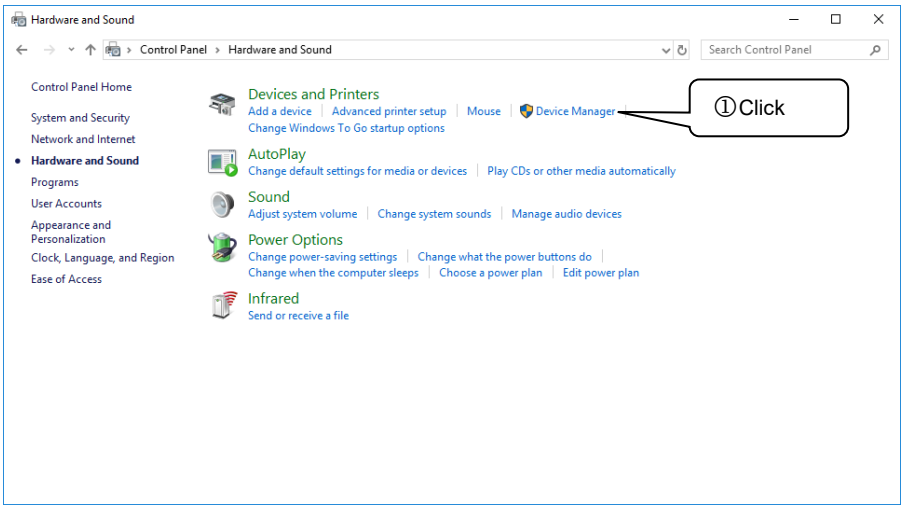
Click the <Start> button. In the All Apps list, and scroll down to the [Windows System] folder and open it. Click [Control Panel].



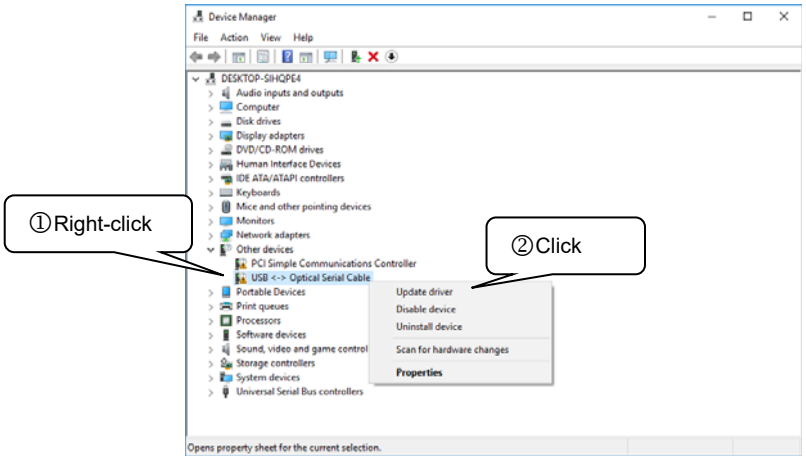
In [Control Panel], click [Hardware and Sound].



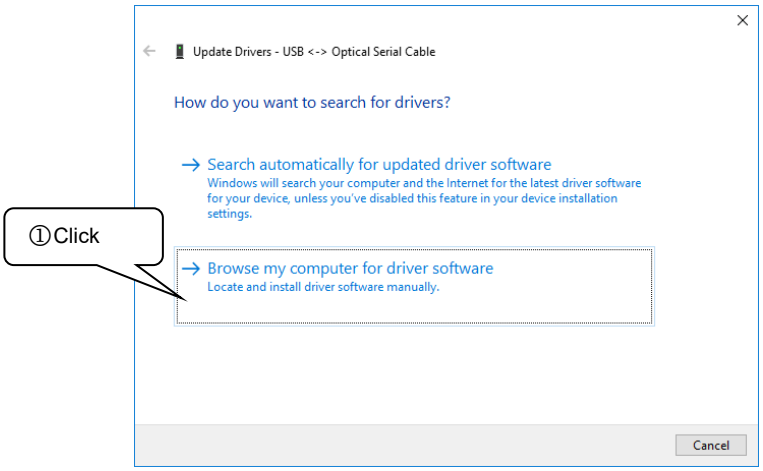
In [Devices and Printers], click [Device Manager].



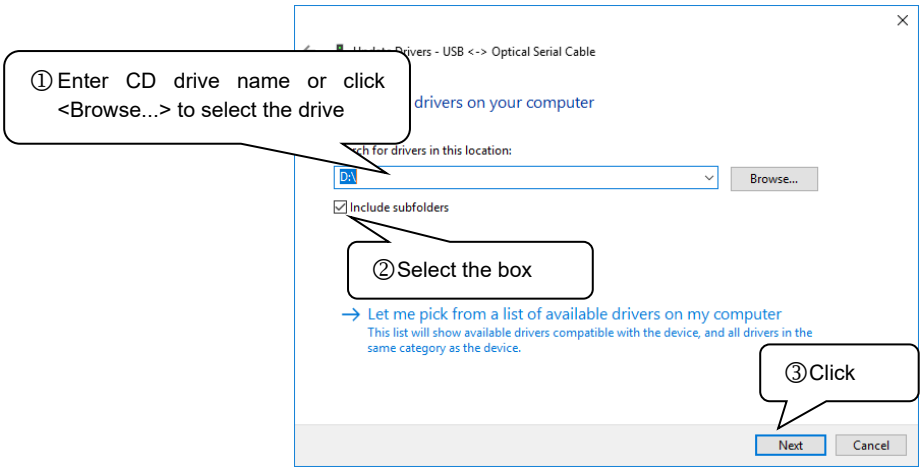
④ If [Other devices] shows [USB <-> Optical Serial Cable] marked with “!”, right-click [USB <-> Optical Serial Cable] and click [Update driver] with the mouse.



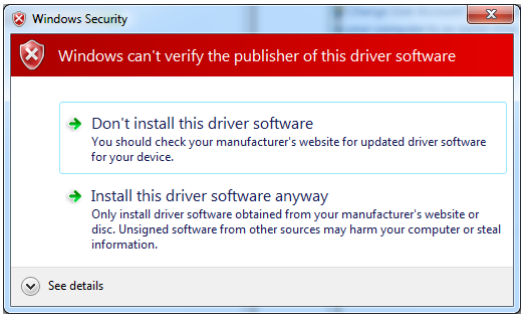
⑤ When the [Update Drivers - USB <-> Optical Serial Cable] screen appears, click [Browse my computer for driver software].



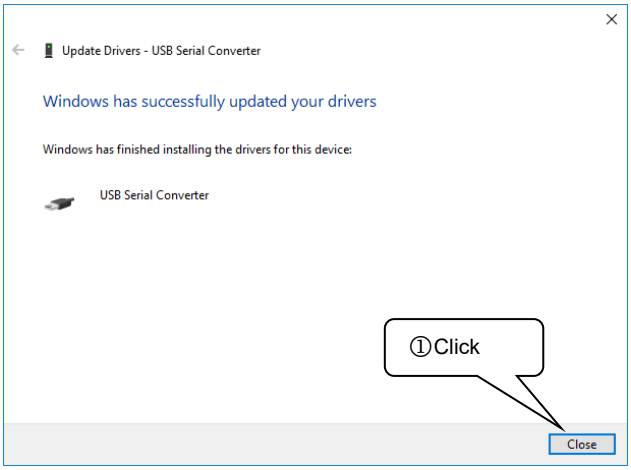
⑥ Specify the name of the drive into which you inserted the driver CD, and select the checkbox for [Include subfolders].



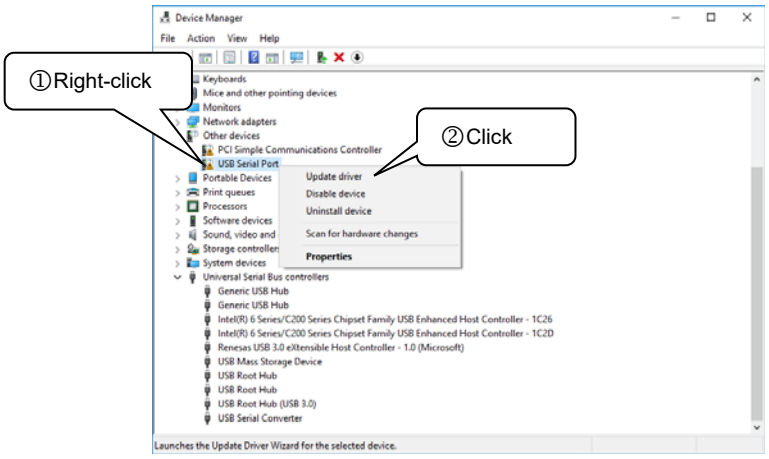
⑦ When the [Windows Security] screen appears, click [Install this driver software anyway].



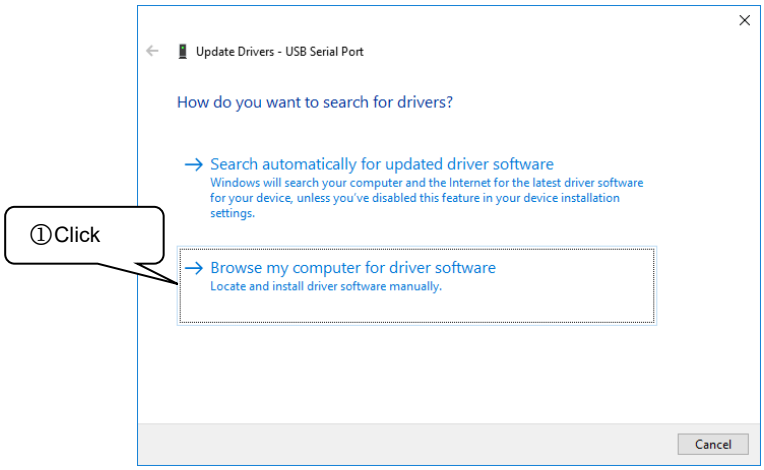
⑧ Once the USB Serial Converter is installed successfully, the completion screen appears.



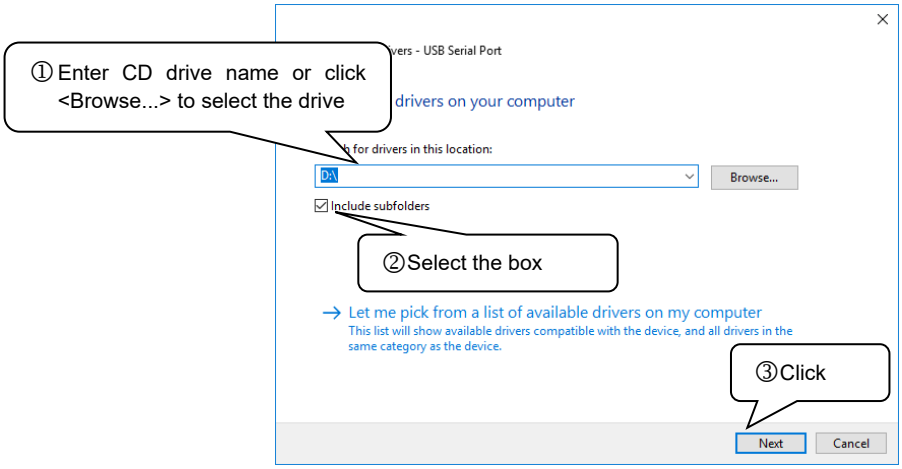
⑨ Install the driver software for the USB Serial Port.
If [Other devices] shows [USB Serial Port] marked with "!", right-click [USB Serial Port] and click [Update driver] with the mouse.



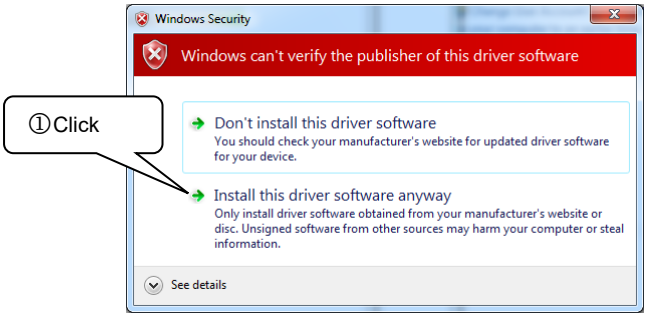
⑩ When the [Update Driver Software - USB Serial Port] screen appears, click [Browse my computer for driver software].



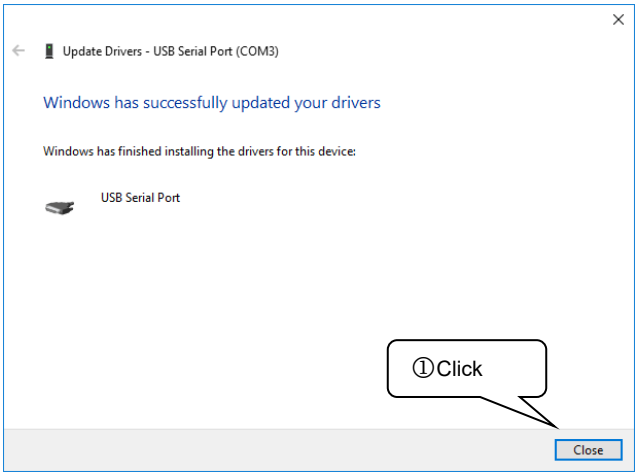
⑪ Specify the name of the drive into which you inserted the driver CD, and select the checkbox for [Include subfolders].



⑭ When the [Windows Security] screen appears, click [Install this driver software anyway].



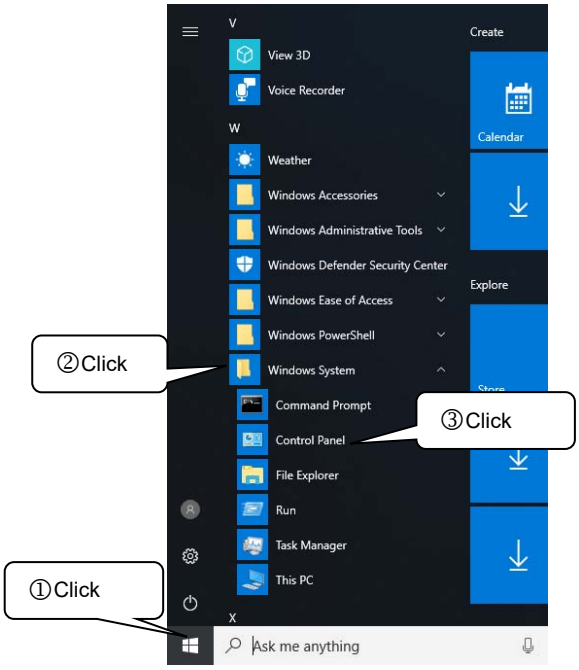
⑮ Once the USB Serial Port is installed successfully, the completion screen appears.



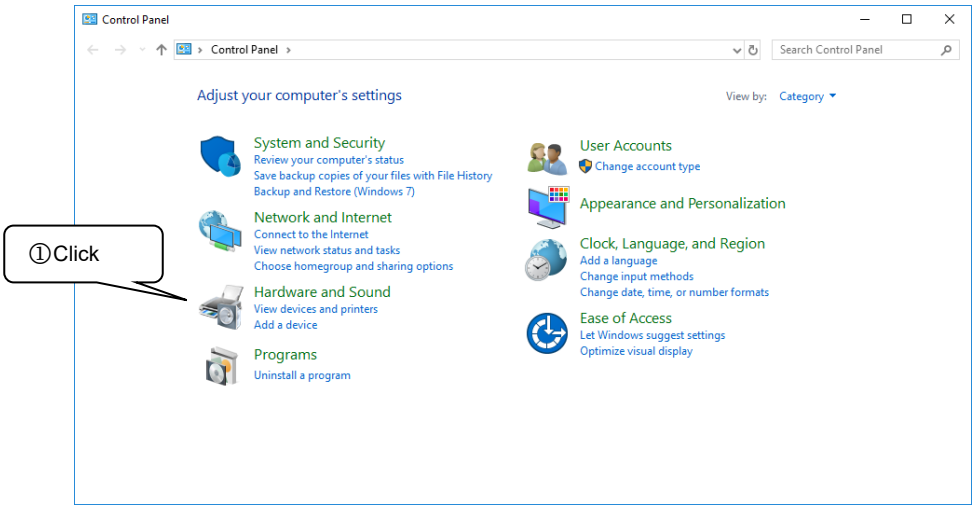
(3) Checking the installation

[Windows 10]

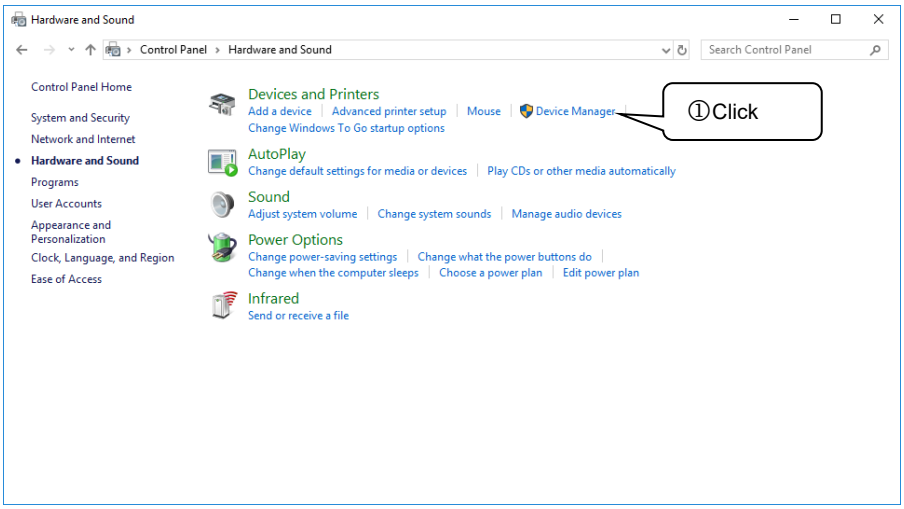
① Click the <Start> button. In the All Apps list, and scroll down to the [Windows System] folder and open it. Click [Control Panel].



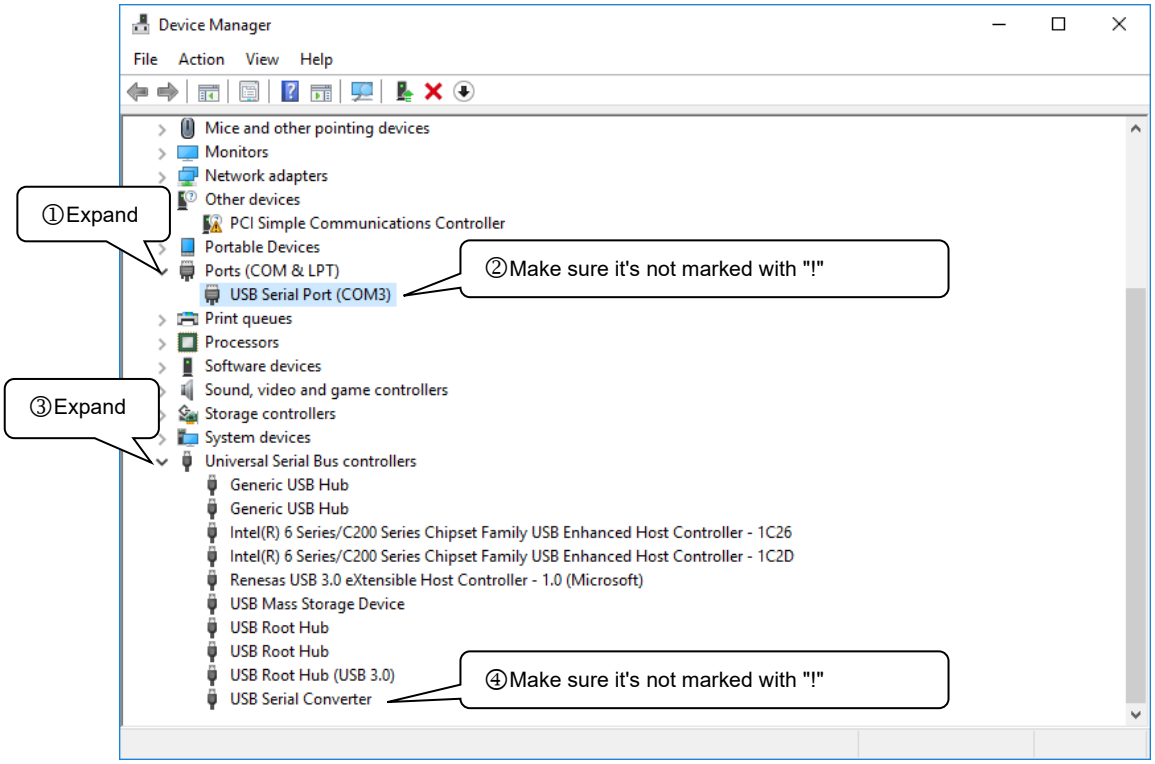
② In [Control Panel], click [Hardware and Sound].



③ In [Devices and Printers], click [Device Manager].



④ In [Device Manager], expand [Ports] and check to make sure that [USB Serial Port(COMx)] is not marked with “!” or “×”.
(The number following COM varies depending on the PC environment.)
Also expand [Universal Serial Bus controllers] and check to make sure that [USB Serial Converter] is not marked with “!” or “×”.



(4) Uninstallation

[Windows 10]

Click the <Start> button on the taskbar. In the All Apps list, and scroll down to the [Windows System] folder and open it. Click [Control Panel], and click [Uninstall a program]. Double-click [VDS-2002RS] from the displayed list. When the user account control appears, click <YES>. Follow the instructions on the screen to continue the uninstallation.

(5) VDS-2002 connection

① Check to see the instrument POWER switched off.
② Check to see EUT INPUT circuit breaker in the OFF position.
③ Connect the USB cable of the optical interface unit to the PC.
④ Connect the optical cable that comes with the optical interface unit to the REMOTE control port at the front of the device and the optical interface unit.
⑤ Turn on the power to the device.
⑥ Start the software.

This completes the connection procedure.

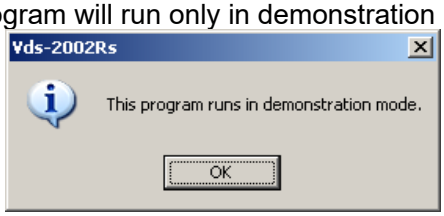
When starting it, **always** turn on the power to the simulator before starting the software.

Depending on your OS version and settings, the screens and operating methods may differ.

5.2. Starting the program

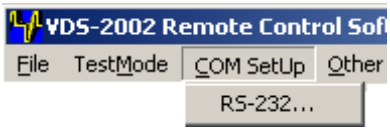
To start the program, double click on the VDS-2002 remote control software icon set-up under [Noiseken]-[VDS-2002Rs] sub-menu found under Program menu on the Start menu at the lower left of the screen.
After starting, connection with the VDS-2002 is confirmed and main screen is displayed.
In the event of an error of communication with the VDS-2002 instrument, a dialog box will appear.

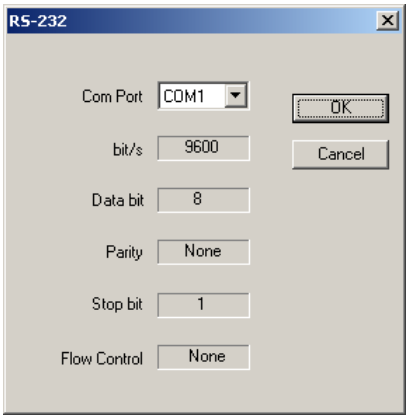
① <Abort> button
Stop starting the program.
② <Retry> button
Retry to communicate with the VDS-2002 instrument.
③ <Ignore> button
Ignoring the communication status, the program starts. In this case, the following dialog box will appear to show the program will run only in demonstration mode.



※No communication with the VDS-2002 in demonstration mode, use this mode only to set or confirm test conditions.
※In case of changing the communication ports, after starting as demonstration mode once, then change the port.
※There are some errors such as the COM port not open other than communication disorder. The operation to recover is the same as the above.

To cancel demonstration mode, select [RS-232...] from [COM Setup] menu in the main screen and select the correct Com Port. If the right communication is confirmed, demonstration mode will be canceled.





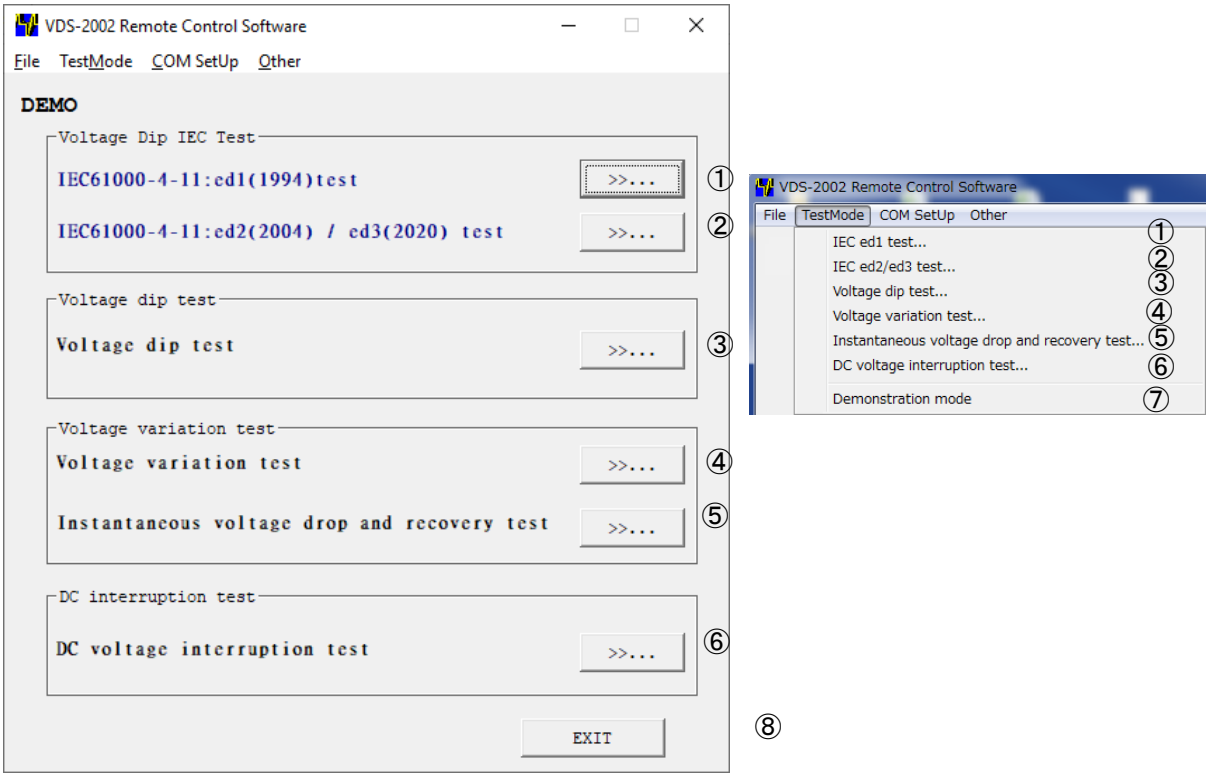
※While demonstration mode executing, [DEMO] is displayed upper left on the screen.
※For Com Port selection, refer to the operation manual of your PC.

6. OPERATION

6.1. Screen transition

Indication of each test mode

6.2. Test type selection



① [IEC ed1 test…]
Open [IEC61000-4-11:ed1(1994)test screen]. Set and conduct the test conforming to the IEC61000-4-11 Ed.1(1994) standard.

② [IEC ed2/ed3 test…]
Open [IEC61000-4-11:ed2(2004)/ed3(2020)test screen]. Set and conduct the test conforming to the IEC61000-4-11 Ed.2(2004)/Ed.3(2020) standard.

③ [Voltage dip test…]
Open [Voltage dip test screen]. Set and conduct various kinds of original tests, for example, voltage dips and ups, short interruptions, etc not described in IEC standard.

④ [Voltage variation test…]
Open [Voltage variation test screen]. Set and conduct the voltage variation test.

⑤ [Instantaneous voltage drop and recovery test…]
Open [Instantaneous voltage drop and recovery test screen]. Set and conduct the voltage variation test.

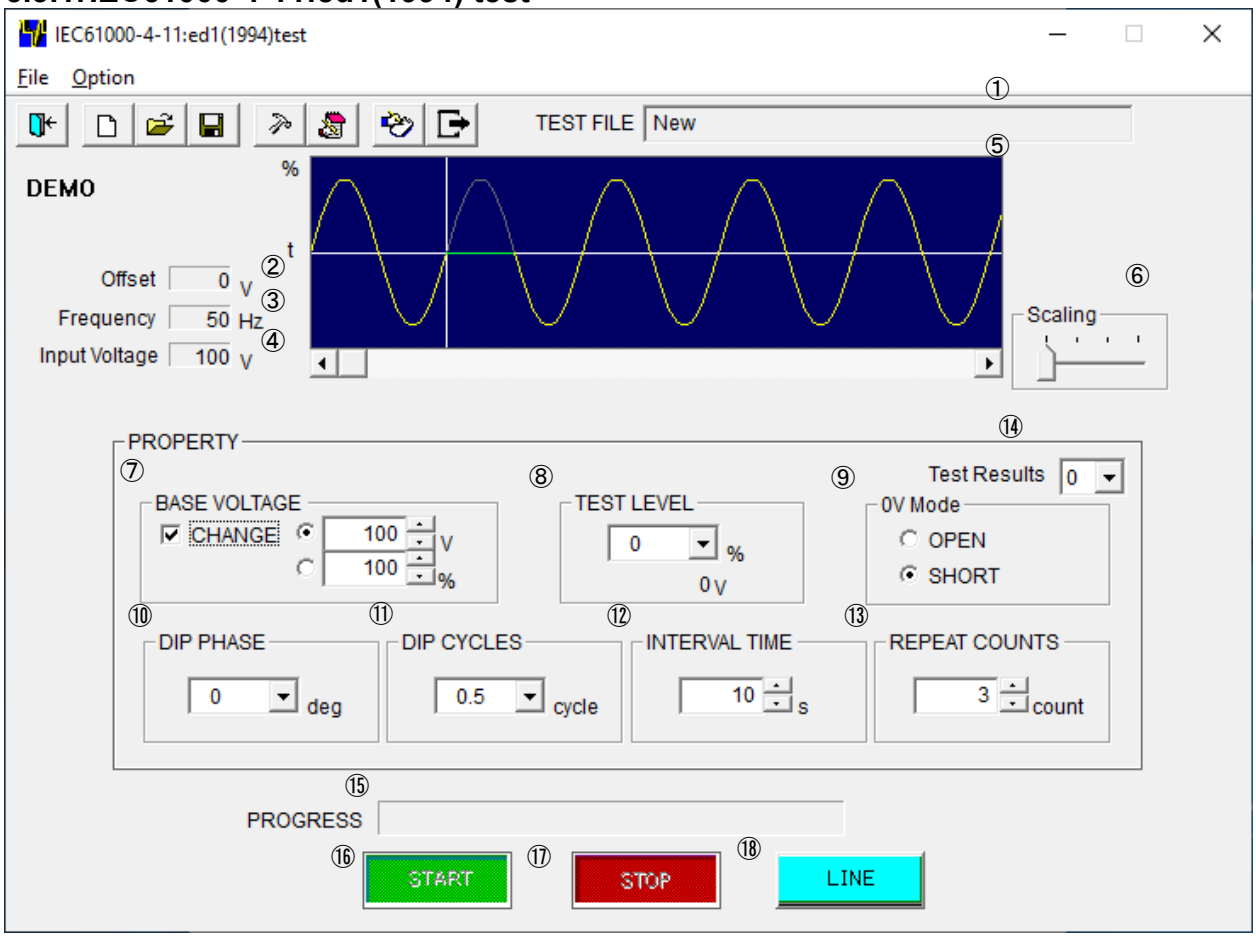
⑥ [DC voltage interruption test…]
Open [DC voltage interruption test screen]. Set and conduct DC voltage interruption test.

⑦ [Demonstration mode]
Get into or out of demonstration mode. No communication with the VDS-2002 in demonstration mode. In case of the failure of communication in starting up, select <Ignore> button to switch into demonstration mode. In demonstration mode, [DEMO] is displayed upper left on the screen.

⑧ [EXIT]
Closes the program.

6.3. Test execution screen

6.3.1. IEC61000-4-11:ed1(1994) test



① [TEST FILE]
Shows the current file name.

② [Offset]
Shows the current offset adjustment. Setting can be changed according to the procedures shown in ㉓.

③ [Frequency]
Shows the frequency of the EUT supply input.

④ [Input Voltage]
Shows the voltage of the EUT supply input. Actual output voltage from this instrument to the EUT can be varied according to ⑦[BASE VOLTAGE] setting.

⑤ Graphical display
Shows the waveform according to each setting value.
※This waveform does not exactly coincide with the actual output.

⑥ [Scaling]
Adjusts a scale of the time axis (x axis of the graph)

⑦ [BASE VOLTAGE]
Sets the output voltage supplying EUT or the ratio of output to the input voltage. When check box [CHANGE] is checked, a range from 10 V to 120% of the input voltage can be set.
※ Setting lower than 10 V can be done but the accuracy cannot be guaranteed.

⑧ [TEST LEVEL]
For a test voltage, selects 0, 40, 70 or 120% of [BASE VOLTAGE]. For your reference, a value in Volts is shown in [TEST LEVEL] box.
※ 120% cannot be selected when this voltage exceeds 1.2 times value of the input voltage.

⑨ [0V Mode]
In [0V Mode], when [TEST LEVEL] is 0V, selects [OPEN] or [SHORT].
[OPEN]: Open circuit between L1 and L2 of EUT (high impedance condition).
[SHORT]: Short circuit between L1 and L2 of EUT.

⑩ [DIP PHASE]
Selects the DIP starting phase from 0/45/90/135/180/225/270/315(deg).

⑪ [DIP CYCLES]
Selects the DIP CYCLES from 0.5/1/5/10/25/50(cycle).

⑫ [INTERVAL TIME]
Sets the interval between each DIP from 1 to 100 s

⑬ [REPEAT COUNTS]
Sets the number of repetitions. Setting to 0 causes the program to run the test endlessly.

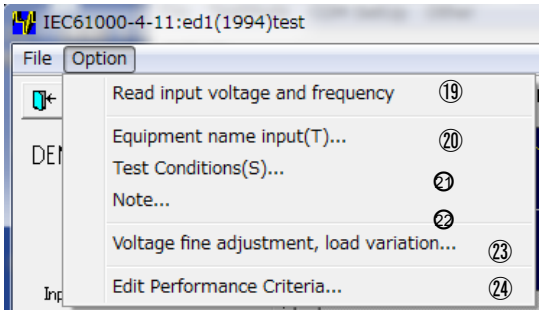
⑭ [Test Results]
Selects the test result from number 0,1…8 in the “Edit performance criteria” screen.

⑮ [PROGRESS]
Indicates a percentage done to graphically represent the test progress. Cannot be changed by the user.

⑯ <START> button.
Starts the test. This button is operative only when the LINE is on.

⑰ <STOP> button
Stops the test. This button is operative only when the LINE and START are on.

⑱ <LINE> button
Turns on and off the EUT supply LINE. When the LINE button pressed, power is supplied to the EUT. Turning off the LINE during the test run terminates the test and power supply to the EUT.



⑲ [Read input voltage and frequency]
Reads the input voltage and frequency for the EUT power supply into this unit. The values are shown in ③④.

⑳ [Equipment name input(T)…]
Enters the serial number of your instrument.

㉑ [Test Conditions(S)…]
Enter information pertinent to the test.

㉒ [Note…]
Opens a dialog box where a memo can be entered. The input area has 1,024 characters.

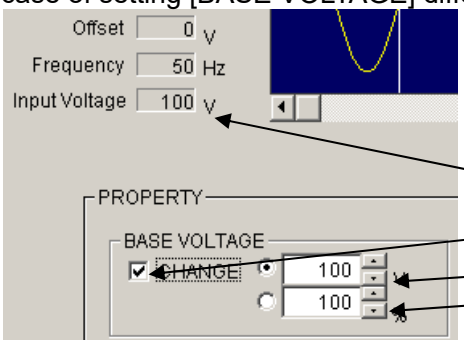
㉓ [Voltage fine adjustment, load variation...]
Opens a dialog box where a voltage fine adjustment and load variation can be done. This is operative only when the LINE is off.

㉔ [Edit Performance Criteria]
Opens a dialog box setting pass-fail decision making criteria.

6.3.2. IEC61000-4-11:ed1(1994) test (Details)

- Setting [BASE VOLTAGE]

In case of setting [BASE VOLTAGE] differently from EUT supplying voltage

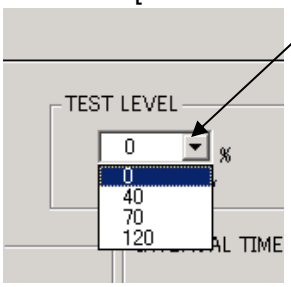


The present [Input Voltage] to EUT
Checking makes setting available.
In case of setting by voltage value
In case of setting by ratio to input voltage

The setting value is available from 10 V to 120% of the input voltage (In this example to 120 V). Set by spin buttons or input the value directly.

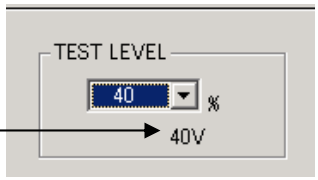
[BASE VOLTAGE] 10 V - 240 V (for the rated voltage 10 V – 240 V EUT) is available, if [Input Voltage] is 200 V. No check in [CHANGE]: Direct mode. Outputs input voltage directly not through slide transformer. Check in [CHANGE]: Sensing mode. Outputs input voltage indirectly corrected through slide transformer.

- SETTING [TEST LEVEL]



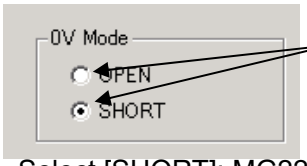
Clicking here makes setting [TEST LEVEL] available. In case of setting value not displaying here, use [AC Voltage Dips, Interruptions swells Tests].

Dip/Up voltage value is displayed here.

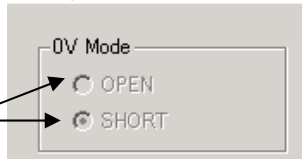


- Setting 0V Mode

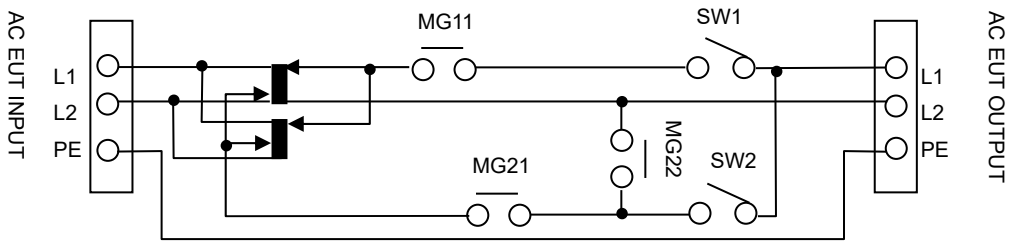
[0V Mode]: Selects [OPEN] (high impedance) or [SHORT] (low impedance) in case that [TEST LEVEL] is 0%/0V (interruption).



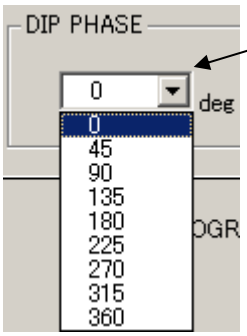
When [TEST LEVEL] is 0%/0V, this mode is available and this part turns white. Unavailable, when [TEST LEVEL] is not 0%/0V.



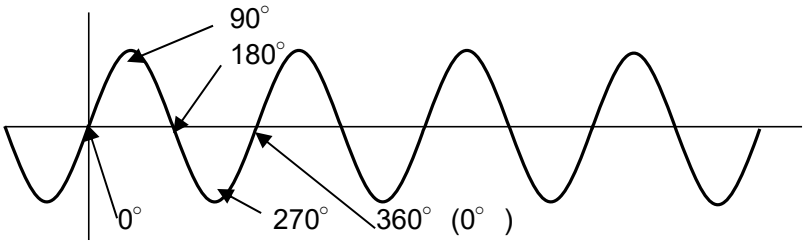
Select [SHORT]: MG22 is ON (MG21 is OFF) and outputs L1-L2 short 0 V.
Select [OPEN]: Both MG22 and MG21 are OFF and outputs open 0 V.



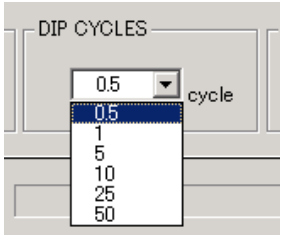
- SETTING [DIP PHASE]
  [DIP PHASE]: Set which position in AC cycle Dip/Up will start.
  Starting position: 0° - 360° with 45° interval.

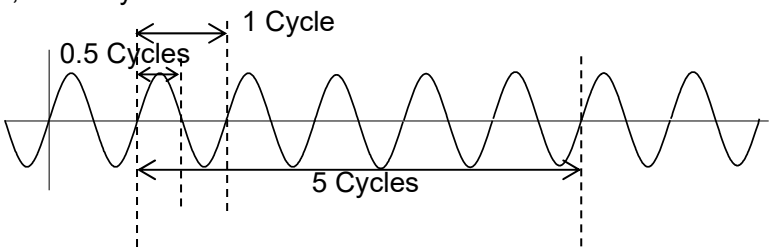


Click here and set [DIP PHASE].



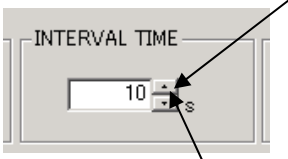
- SETTING [DIP CYCLE]
  Set the cycle executing Dip.
  Select from 0.5, 1, 5, 10, 25, or 50 Cycle.



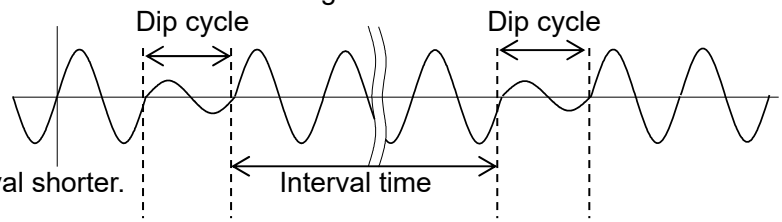


- SETTING [INTERVAL TIME]
  Set the Dip interval time by the second. 1-100 second is available. Set by spin buttons or input the value directly.

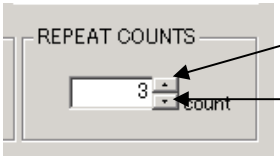
The button makes interval longer.



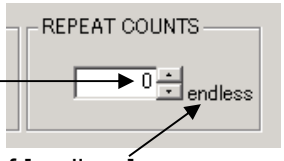
The button makes interval shorter.



- SETTING [REPEAT COUNTS]
  Set how many Dips will execute. 1-100 times is available. Setting “0” means endless repeat (until STOP). Set by spin buttons or input the number of times directly.



The button makes repeating times more.
Input 0: endless repeat
The button makes repeating times less

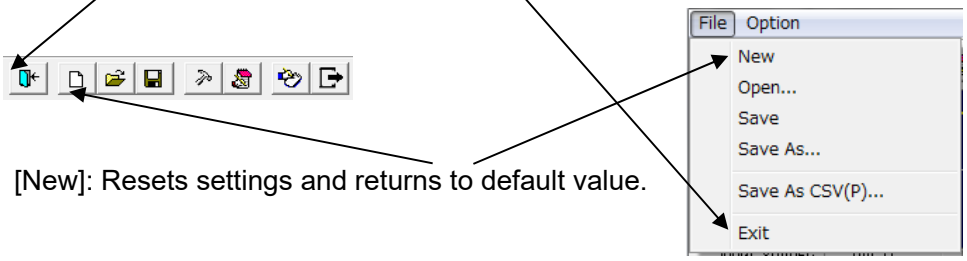


Message of [endless]

.

- Tool bar buttons and menu
  Tool bar buttons: Executing the functions, for example, file menu. Menu items of the tool bar are displayed by graphic image.

- Closing a test and initialization of settings
  [Exit]: Closes IEC test menu and return main screen.

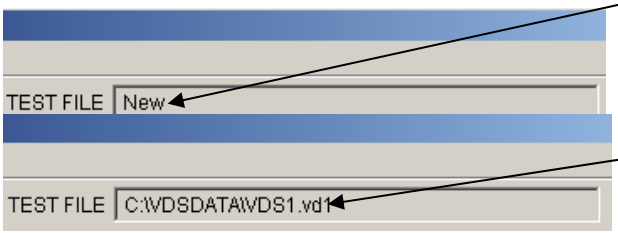


[New]: Resets settings and returns to default value.

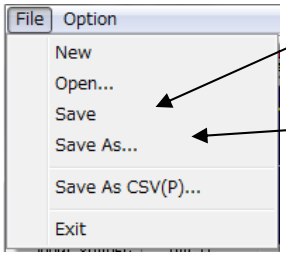
- Saving settings
  Saves the present settings.

In case of read in files, overwrites them. In case of setting newly, saves them with naming or designating.

Case of new setting



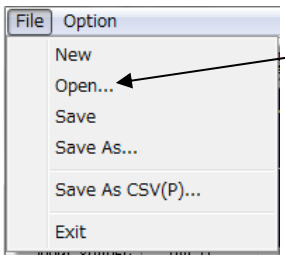
In case of read in files, displays the file's name.



In case of selecting [Save], overwrites the file, also.
(Only in case of not reading in any files, names and saves it as a new file.)

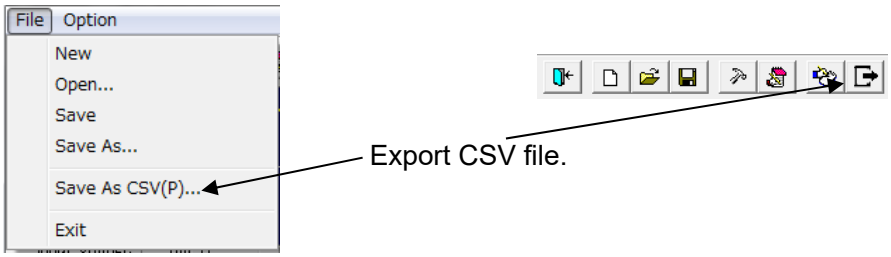
[Save As]: Names the file and save it.
(In case of the read in file, makes a new file.)

- Reading in saved files



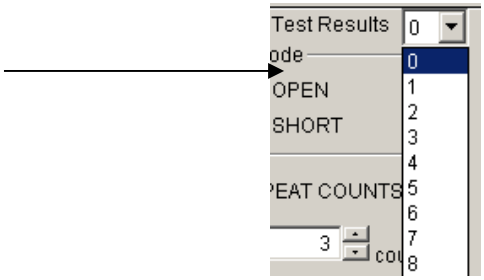
Reads in a saved file.

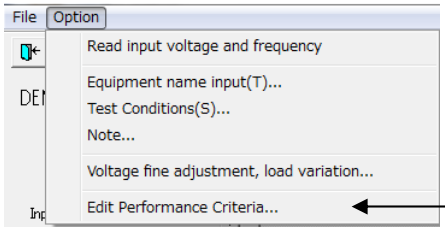
- [Save As CSV(P)…] (To export CSV file)
  Export test settings in CSV format.
  *Refer [6.4. CSV File Export].



- Taking test result into a test report,

  Select from [Test Results] combo-box.
  “0” means blank. 1-4 parallels A-D.
  By editing the performance criteria,
  5-8 can be edited freely.

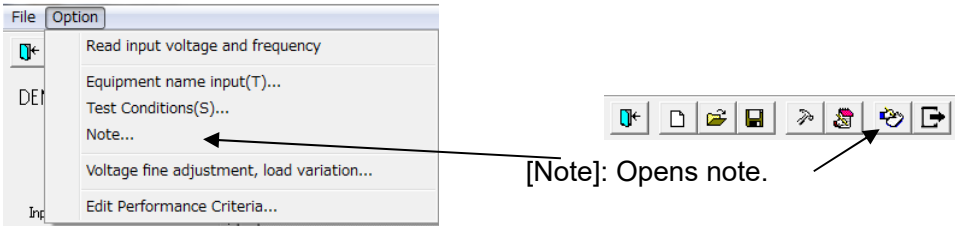




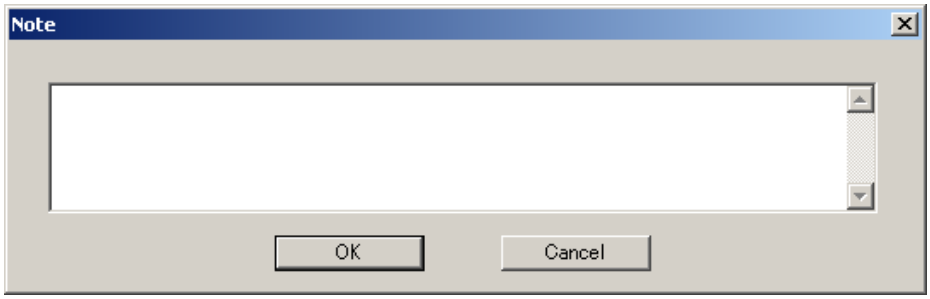
[Edit Performance Criteria]: edits the performance criteria.

*Refer [6.3.14 Edit Performance Criteria].

- Inputting comments into note
  Can input comments in each test setting file and save them when settings are set (to 1,024 Characters).

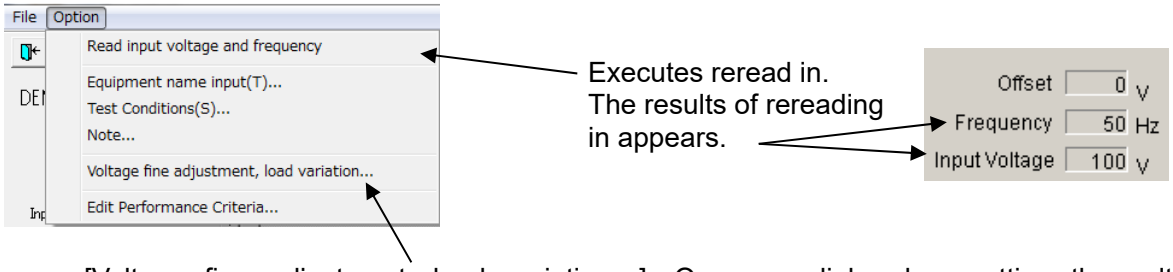


Note box with <OK> button and <Cancel> button.



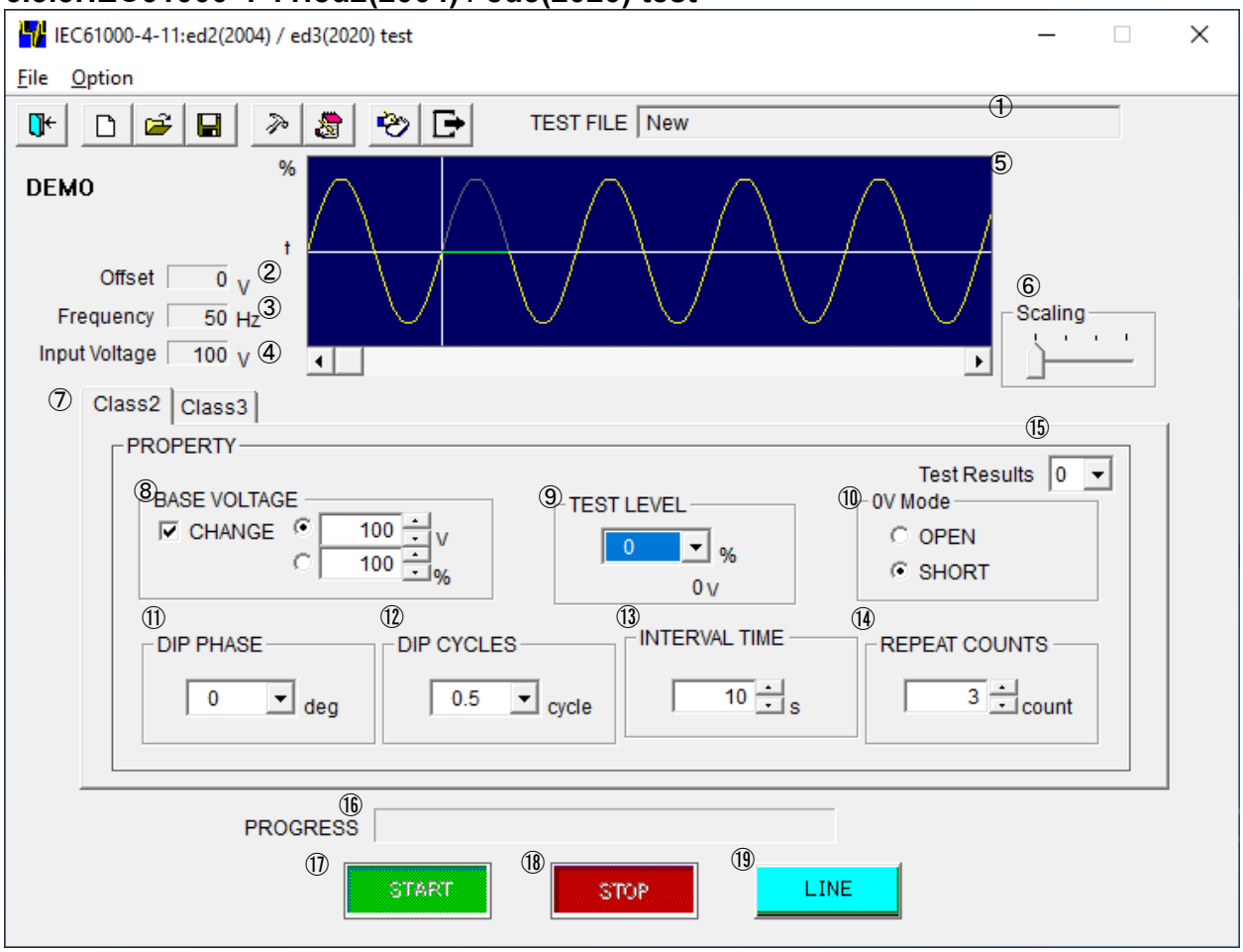
After inputting comments and editing, finish by <OK>. <Cancel>: Finishes with editing invalid.

- Rereading in input voltage and frequency. Adjusting voltage and setting load variation.
  Rereads in the input voltage and frequency when IEC test screen opens. In case of changing the voltage and/or the frequency after, rereads them in to modify the values to the situation as the VDS-2002.



[Voltage fine adjustment, load variation…]: Opens a dialog box setting the voltage adjustment and load variation. Available while LINE is OFF.
*Refer [6.3.13 Voltage Fine Adjustment & Load Variation].

6.3.3. IEC61000-4-11:ed2(2004) / ed3(2020) test



① [TEST FILE]
Shows the current file name.

② [Offset]
Shows the current offset adjustment. Setting can be changed according to the procedures shown in ㉔.

③ [Frequency]
Shows the frequency of the EUT supply input.

④ [Input Voltage]
Shows the voltage of the EUT supply input. Actual output voltage from this instrument to the EUT can be varied according to [BASE VOLTAGE] setting.

⑤ Graphical display
Shows the waveform according to each setting value.
※This waveform does not exactly coincide with the actual output.

⑥ [Scaling]
Adjusts a scale of the time axis (x axis of the graph)

⑦ [Class]
Selects test level, [Class2] or [Class3].

⑧ [BASE VOLTAGE]
Sets the output voltage supplying EUT or the ratio of output to the input voltage. When check box [CHANGE] is checked, a range from 10 V to 120% of the input voltage can be set.
※Setting lower than 10 V can be done but the accuracy cannot be guaranteed.

⑨ [TEST LEVEL]
For a test voltage, selects 0, 40, 70 or 120% of [BASE VOLTAGE]. For your reference, a value in Volts is shown in [TEST LEVEL] box.
※120% cannot be selected when this voltage exceeds 1.2 times value of the input voltage.

⑩ [0V Mode]
In [0V Mode], when [TEST LEVEL] is 0V, selects [OPEN] or [SHORT].
[OPEN]: Open circuit between L1 and L2 of EUT (high impedance condition).
[SHORT]: Short circuit between L1 and L2 of EUT.

⑪ [DIP PHASE]
Selects the DIP starting phase from 0/45/90/135/180/225/270/315(deg).

⑫ [DIP CYCLES]
Selects the DIP CYCLES.

⑬ [INTERVAL TIME]
Sets the interval between each DIP from 1 to 100 s

⑭ [REPEAT COUNTS]
Sets the number of repetitions. Setting to 0 causes the program to run the test endlessly.

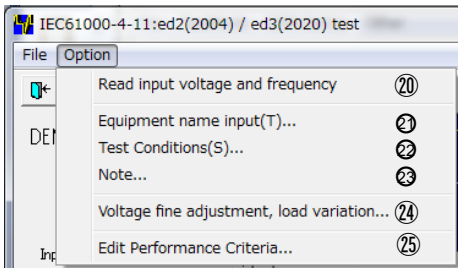
⑮ [Test Results]
Selects the test result from number 0,1…8 in the “Edit performance criteria” screen.

⑯ [PROGRESS]
Indicates a percentage done to graphically represent the test progress. Cannot be changed by the user.

⑰ <START> button.
Starts the test. This button is operative only when the LINE is on.

⑱ <STOP> button
Stops the test. This button is operative only when the LINE and START are on.

⑲ <LINE> button
Turns on and off the EUT supply LINE. When the LINE button pressed, power is supplied to the EUT. Turning off the LINE during the test run terminates the test and power supply to the EUT.



⑳ [Read input voltage and frequency]
Reads the input voltage and frequency for the EUT power supply into this unit. The values are shown in ③④.

㉑ [Equipment name input(T)…]
Enters the serial number of your instrument.

㉒ [Test Conditions(S)…]
Enter information pertinent to the test.

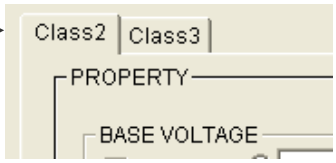
㉓ [Note…]
Opens a dialog box where a memo can be entered. The input area has 1,024 characters.

㉔ [Voltage fine adjustment, load variation...]
Opens a dialog box where a voltage fine adjustment and load variation can be done. This is operative only when the LINE is off.

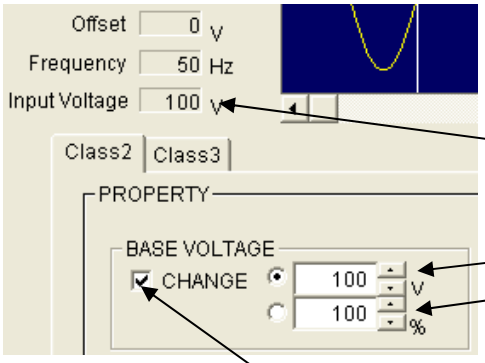
㉕ [Edit Performance Criteria]
Opens a dialog box setting pass-fail decision making criteria.

6.3.4. IEC61000-4-11:ed2(2004) / ed3(2020) test (Details)

- Setting [CLASS]
  Select a class (test level) of your test with tabs.
  Selectable values of [TEST LEVEL] and [DIP CYCLE] depend on the selected class.



- Setting [BASE VOLTAGE]
  In case of setting [BASE VOLTAGE] differently from EUT supplying voltage



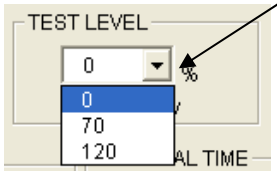
The present [Input Voltage] to EUT

In case of setting by voltage value
In case of setting by ratio to input voltage

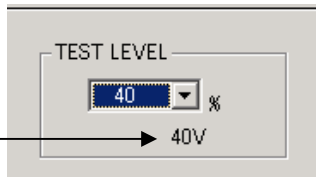
Checking makes setting available.
The setting value is available from 10 V to 120% of the input voltage (In this example to 120 V). Set by spin buttons or input the value directly.

[BASE VOLTAGE] 10 V - 240 V (for the rated voltage 10 V - 240 V EUT) is available, if [Input Voltage] is 200 V.
*No check in [CHANGE]: Direct mode. Outputs input voltage directly not through slide transformer.
*Check in [CHANGE]: Sensing mode. Outputs input voltage indirectly corrected through slide transformer.

- SETTING [TEST LEVEL]



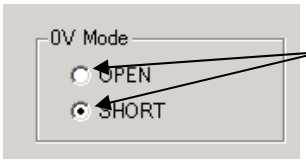
Clicking here makes setting [TEST LEVEL] available. In case of setting value not displaying here, use [AC Voltage Dips, Interruptions swells Tests].



Dip/Up voltage value is displayed here.

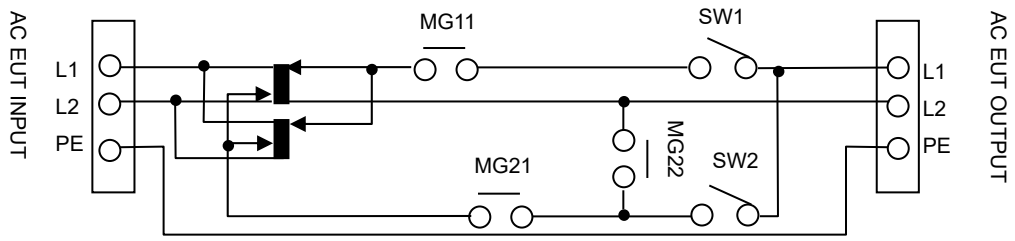
- Setting 0V Mode

[0V Mode]: Selects [OPEN] (high impedance) or [SHORT] (low impedance) in case that [TEST LEVEL] is 0%/0V (interruption).



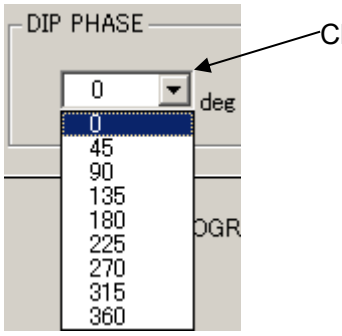
When [TEST LEVEL] is 0%/0V, this mode is available and this part turns white.
Unavailable, when [TEST LEVEL] is not 0%/0V.

Select [SHORT]: MG22 is ON (MG21 is OFF) and outputs L1-L2 short 0 V.
Select [OPEN]: Both MG22 and MG21 are OFF and outputs open 0 V.

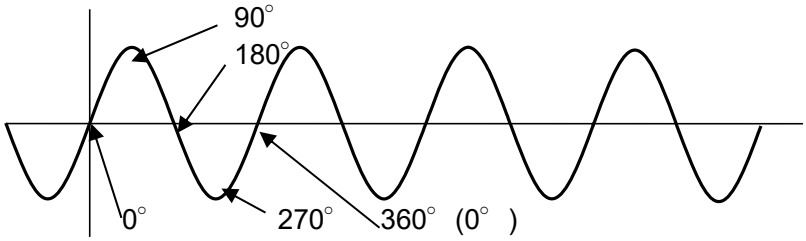


- SETTING [DIP PHASE]

[DIP PHASE]: Set which position in AC cycle Dip/Up will start.
Starting position: 0° - 360° with 45° interval.

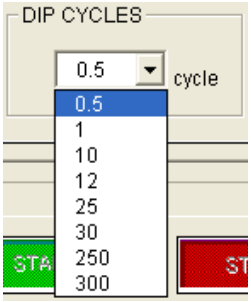


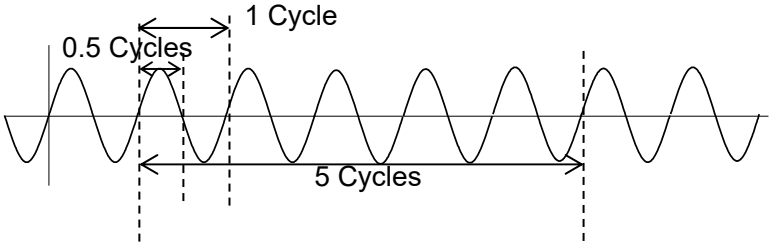
Click here and set [DIP PHASE].



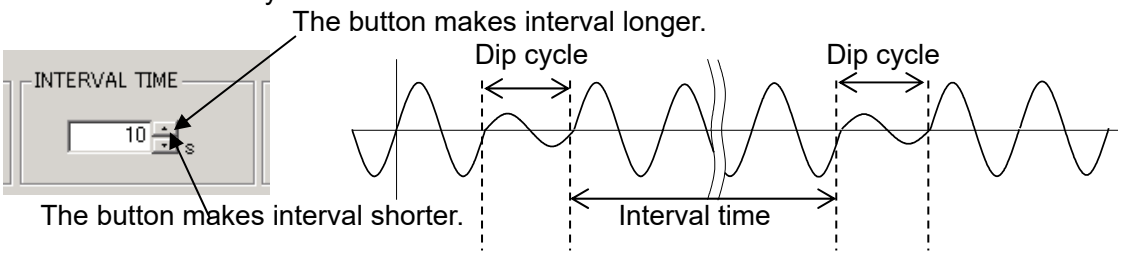
- SETTING [DIP CYCLE]

Set the cycle executing Dip.
The displayed values are dependent on Class. TEST LEVEL, and input frequency.

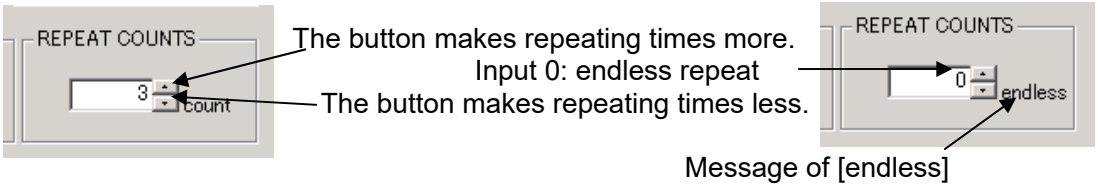




- SETTING [INTERVAL TIME]
  Set the Dip interval time by the second. 1-100 second is available. Set by spin buttons or input the value directly.

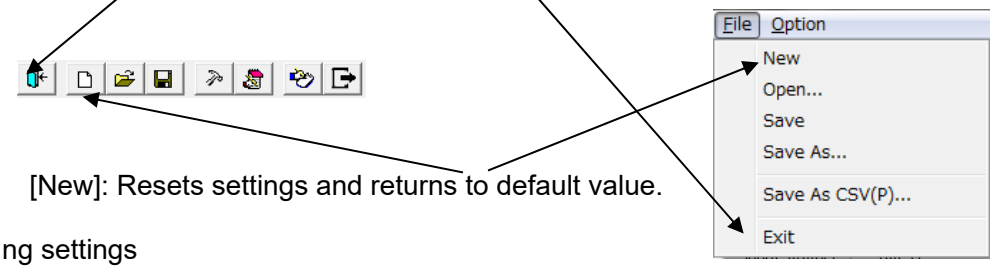


- SETTING [REPEAT COUNTS]
  Set how many Dips will execute. 1-100 times is available. Setting “0” means endless repeat (until STOP). Set by spin buttons or input the number of times directly.



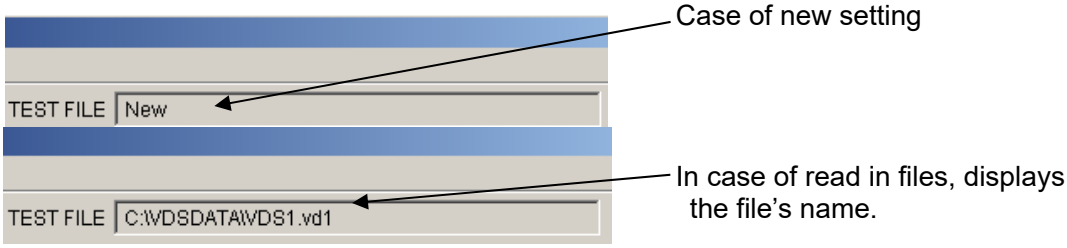
- Tool bar buttons and menu
  Tool bar buttons: Executing the functions, for example, file menu. Menu items of the tool bar are displayed by graphic image.

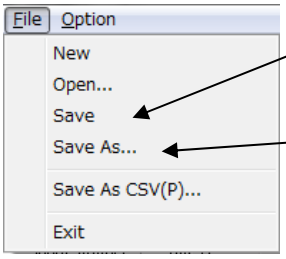
- Closing a test and initialization of settings
  [Exit]: Closes IEC test menu and return main screen.



- Saving settings
  Saves the present settings.

In case of read in files, overwrites them. In case of setting newly, saves them with naming or designating.

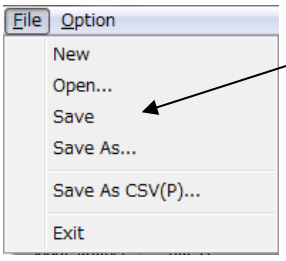




In case of selecting [Save], overwrites the file, also.
(Only in case of not reading in any files, names and saves it as a new file.)

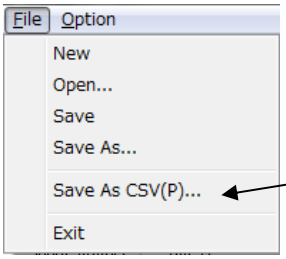
[Save As]: Names the file and save it.
(In case of the read in file, makes a new file.)

- Reading in saved files



Reads in a saved file.

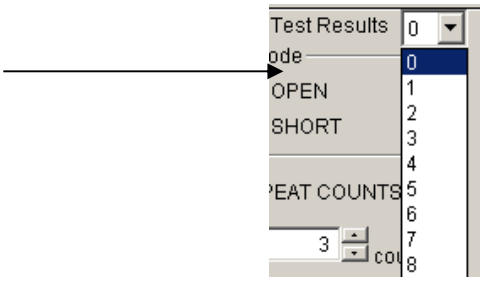
- [Save As CSV(P)…] (To export CSV file)
  Export test settings in CSV format.
  *Refer [6.4. CSV File Export].

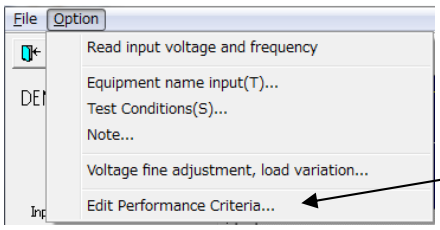


Export CSV file.

- Taking test result into a test report,

Select from [Test Results] combo-box.
“0” means blank. 1-4 parallels A-D.
By editing the performance criteria,
5-8 can be edited freely.



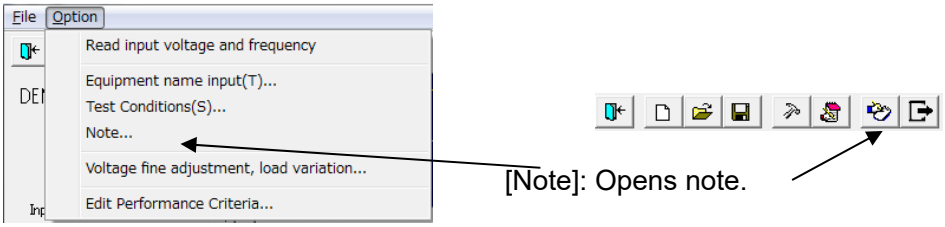


[Edit Performance Criteria]: edits the performance criteria.

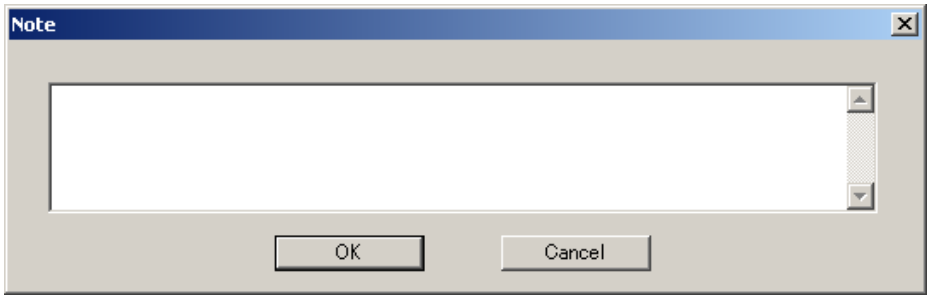
*Refer [6.3.14 Edit Performance Criteria].

- Inputting comments into note

  Can input comments in each test setting file and save them when settings are set (to 1,024 Characters).



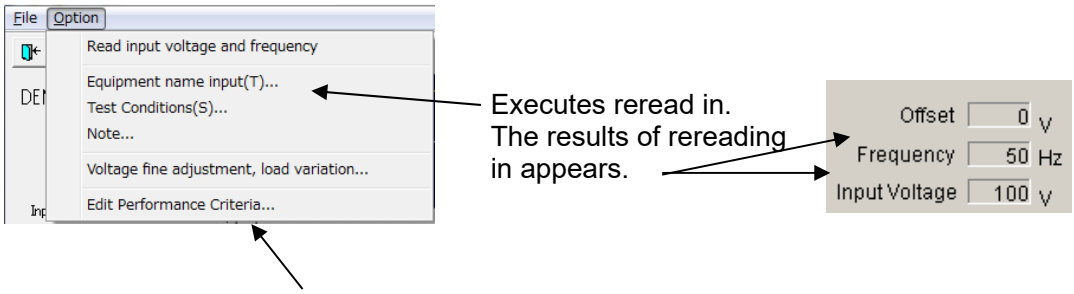
  Note box with <OK> button and <Cancel> button.



  After inputting comments and editing, finish by <OK>. <Cancel>: Finishes with editing invalid.

- Rereading in input voltage and frequency. Adjusting voltage and setting load variation.

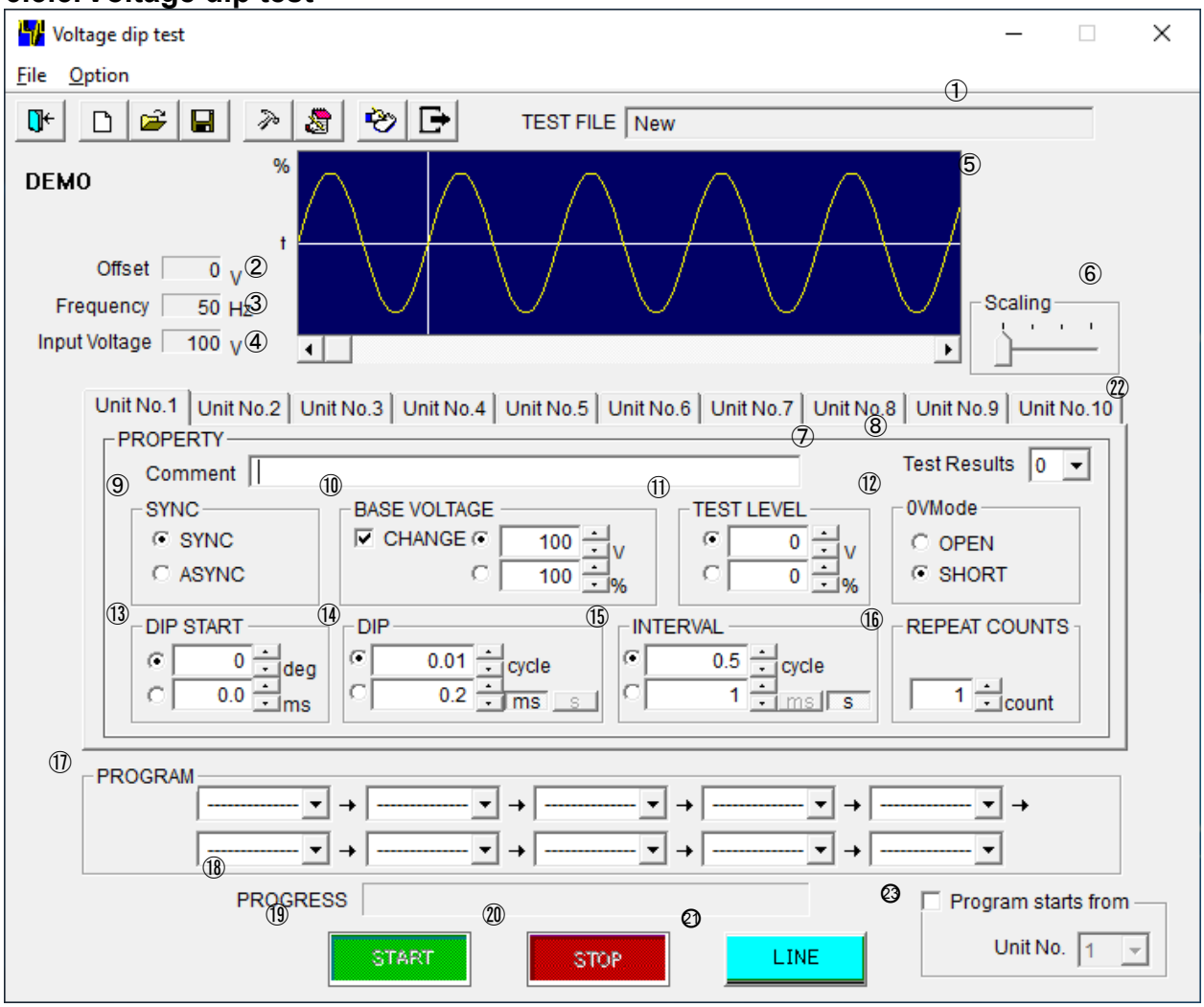
  Rereads in the input voltage and frequency when IEC test screen opens. In case of changing the voltage and/or the frequency after, rereads them in to modify the values to the situation as the VDS-2002.



  [Voltage fine adjustment, load variation…]: Opens a dialog box setting the voltage adjustment and load variation. Available while LINE is OFF.

  *Refer [6.3.13 Voltage Fine Adjustment & Load Variation].

6.3.5. Voltage dip test



① [TEST FILE]
Shows the current file name.

② [Offset]
Shows the current voltage offset adjustment. Setting can be changed according to the procedures shown in ㉘.

③ [Frequency]
Shows the frequency of the EUT supply input.

④ [Input Voltage]
Shows the voltage of the EUT supply input. Actual output voltage from this instrument to the EUT can be varied according to [BASE VOLTAGE] setting.

⑤ [Graphical display]
Represents a simulated waveform based on parameter settings. This waveform cannot be changed by directly manipulating the graph section. This waveform does not exactly coincide with the actual output.

⑥ [Scaling]
Sets multiplication factor of the time axis of the graph.

⑦ [Comment]
Free memo space to comment on the current Unit No. The area has 100 characters space.

⑧ [Test Results]
Selects the test result from the performance criteria 0-8

⑨ [SYNC]
Selects Synchronized or Asynchronized mode
[SYNC] : Dip/Interruption/Swell events occur in sync with the EUT supply frequency.
[ASYNC] : Dip/Interruption/Swell events occur irrespective of the EUT supply phase angle or timing.

⑩ [BASE VOLTAGE]
Sets the output voltage supplying EUT or the ratio of output to the input voltage. When check box [CHANGE] is checked, a range from 10 V to 120% of the input voltage can be set.
※ Setting lower than 10 V can be done but the accuracy cannot be guaranteed.

⑪ [TEST LEVEL]
Sets the test level. A value in Volts or in percent against [BASE VOLTAGE] can be entered. The allowable range here is 0 V and 10 V to 120% of the input voltage. (Setting on [CHANGING TIME] may restrict [TEST LEVEL] setting.
※Setting from 1 V to 9 V can be done but the accuracy cannot be guaranteed.

⑫ [0V Mode]
When 0 V is selected with [TEST LEVEL], the programs provides facilities to select output impedance
[OPEN] : selects the open circuit (high impedance)
[SHORT] : selects the short circuit

⑬ [DIP START] Sets the DIP starting phase angle or its instant.(Only in [SYNC])
Phase angle : 0～359 (deg)
Time : 0-19.9 ms for 50 Hz mains, 0-16.6 ms for 60 Hz mains

⑭ [DIP]
Sets the DIP cycles or duration.
DIP cycles : 0.01～5000 (cycle) (Only in [SYNC])
DIP duration : 0.1～100000.0(ms) (100 s) at a step of 0.1 ms in the SYNC mode
: 0.1～100000.0(ms) at a step of 0.1 ms or 1～36000(s) at a step of 1 s in the ASYNC mode
※When the setting in Cycle is selected on the [INTERVAL], the DIP cycles or durations shall not exceed the cycles set on [INTERVAL]

⑮ [INTERVAL]
Sets the interval between each DIP.
[cycle] : 0.5～5000.5 (cycle) at a step of 0.5 cycle.(Only in [SYNC])
The cycles from the beginning of a DIP to the beginning of the next DIP
※A shorter setting than the DIP is not allowed.
[ms][s] : 1～100 (s) at a 1 s step in the SYNC mode
Number of seconds between the end of a DIP and the beginning of the next DIP
0.2 (ms) to 100000.0 (ms) at a 0.1 ms step or 1 to 100 (s) at 1 s step in the ASYNC mode.
The shortest setting is a time of period equivalent to a half cycle to the input mains frequency.

⑯ [REPEAT COUNTS]
Sets the number of repetitions. Setting to 0 causes the program to run the test endlessly.

⑰ [PROGRAM]
Sets the sequence of executing different Unit No. (test steps). The PROGRAM shows the made sequence shown by the arrows. Unselected boxes are automatically skipped midstream and the Unit No. selected on the next box is executed.

⑱ [PROGRESS]
Indicates a percentage done to graphically represent the test progress. Cannot be changed by the user.

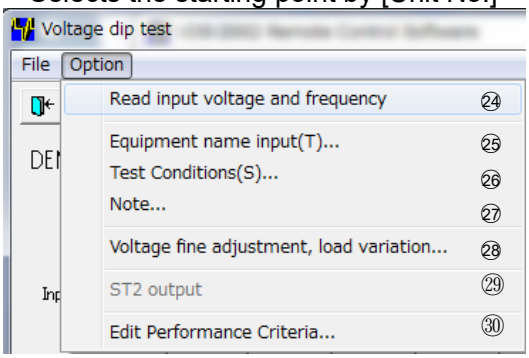
⑲ <START> button
Starts the test. This button is operative only when the LINE is on.

⑳ <STOP> button
Stops the test. This button is operative only when the LINE and START are on.

㉑ <LINE> button
Turns on and off the EUT supply LINE. When the LINE button pressed, power is supplied to the EUT. Turning off the LINE during the test run terminates the test and power supply to the EUT.

㉒ Unit No.1～10
Sets and saves 10 test steps (Unit) maximum.

㉓ [Program starts from]
Selects the starting point by [Unit No.]



㉔ [Read Input voltage and frequency]
Reads the input voltage and frequency of the EUT supply. The read in value indicates②③.

㉕ [Equipment name input(T)…]
Enters the serial number of your instrument.

㉖ [Test Conditions(S)…]
Enter information pertinent to the test.

㉗ [Note...]
Opens a dialog box where a memo can be entered. The input area has 1,024 characters.

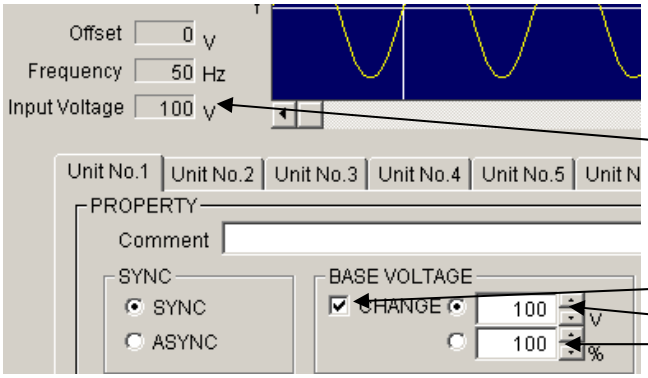
㉘ [Voltage fine adjustment, load variation...]
Opens a dialog box where a voltage fine adjustment and load variation can be done. This sub-menu is operative only when the LINE is off.

㉙ [ST2 output]
Outputs the [TEST LEVEL] voltage on the current Unit No. This is operative only when the LINE is on.

㉚ [Edit Performance Criteria]
Opens a dialog box to set and edit the performance criteria.

6.3.6. Voltage dip test (Details)

- Setting [BASE VOLTAGE]
  In case of setting [BASE VOLTAGE](rated voltage) different from [Input Voltage]

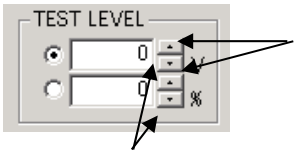


[Input Voltage]: Indicates the present EUT supplying voltage.

Check here and [CHANGE] is available.
Set by the voltage value.
Set by the ratio to [Input voltage].

Setting: From 10 V to 120% of [Input Voltage] is available (in the above example: to 120%) by using spin buttons or inputting the value.
[BASE VOLTAGE] 10 V – 240 V (for the rated voltage 10 V – 240 V EUT) is available, if [Input Voltage] is 200 V.
*No check in [CHANGE]: Direct mode. Outputs input voltage directly not through slide transformer.
*Check in [CHANGE]: Sensing mode. Outputs input voltage indirectly corrected through slide transformer.

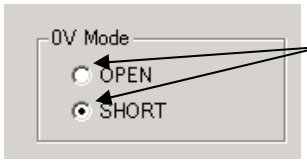
- Setting [TEST LEVEL]
  Sets [TEST LEVEL] by inputting the voltage value or the ratio to [BASE VOLTAGE] (Similar way with setting [BASE VOLTAGE]) by using spin buttons or inputting the value directly.



The buttons make [TEST LEVEL] higher.

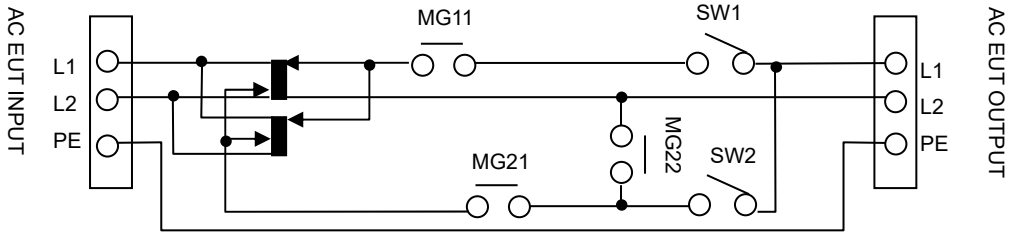
The buttons make [TEST LEVEL] lower.

- Setting [0V Mode]
  [0V Mode]: Selects [OPEN] (high impedance) or [SHORT] (low impedance) in case that [TEST LEVEL] is 0%/0V (interruption).

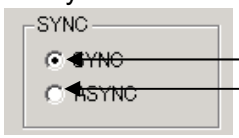


When [TEST LEVEL] is 0%/0V, this mode is available and this part turns white.
Unavailable, when [TEST LEVEL] is not 0%/0V.

Select [SHORT]: MG22 is ON (MG21 is OFF) and outputs L1-L2 short 0 V.
Select [OPEN]: Both MG22 and MG21 are OFF and outputs open 0 V.



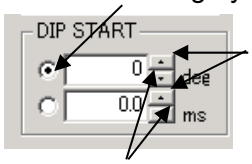
- Setting [SYNC] or [ASYNC] of tests
  Whether a test will be executed synchronized with AC cycle or not can be set.
  In case of selecting [SYNC](a synchronized test), the test will start and stop synchronized with AC cycle. In case of selecting [ASYNC], Dip/Up will be done with no relationship with AC cycle.



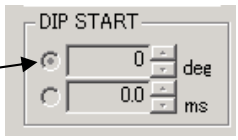
Click here to select [SYNC] test.
Click here to select [ASYNC] test.

- Setting [DIP START]
  [DIP START]: Sets what position on AC cycle Dip/Up will start.
  Setting by the phase angle (0°-360°, 1°step) or by time is available. In case of setting by time, maximum length is AC one cycle time. Set by using spin buttons or inputting numbers directly.
  In case of selecting [ASYNC], setting [DIP START] is unavailable.

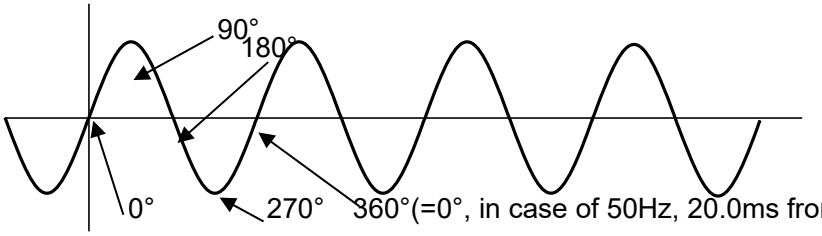
Setting by angle is selected.



Buttons making starting position behind.
Cannot input while selecting [ASYNC].

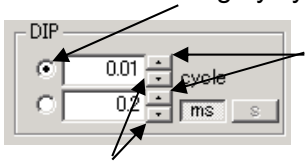


Buttons making starting position ahead.

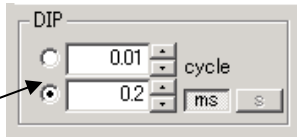


- Setting [DIP] --DIP/ UP-- (In case of selecting [SYNC])
  [DIP]: Sets a Dip/Up period. The setting unit is AC Cycle or ms. In case of cycle, setting 0.01-5,000 (0.01 step) cycles is available. In case of ms, setting 0.2-100,000 (0.1 step) ms is available. Set by using spin buttons or inputting numbers directly.

Setting by cycle is selected.



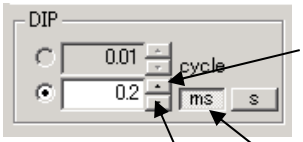
Makes a Dip/Up period longer.



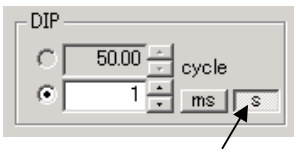
Makes a Dip/Up period shorter.

Setting by ms (time) is selected.

- Setting [DIP] --DIP/ UP-- (In case of selecting [ASYNC])
  [DIP]: Sets a Dip/Up period. The setting unit is ms or s. In case of ms, setting 0.2-100,000 (0.1 step) ms is available. In case of s, setting 1-36,000 (1 s step) s is available. Set by using spin buttons or inputting numbers directly.



Makes a Dip/Up period longer.

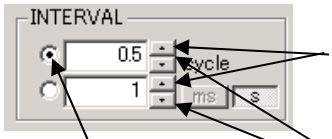


Setting by ms is selected.

Makes a Dip/Up period shorter.

Setting by s is selected.

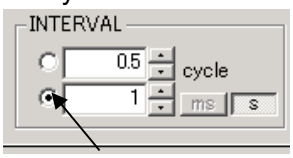
- Setting [INTERVAL] (In case of selecting [SYNC])
  [INTERVAL]: Sets an interval between 2 Dip/Ups. The setting unit is cycle or s. In case of cycle, setting 0.5-5,000.5 (0.5 step) cycles is available. In case of s, setting 1-100 (1 s step) s is available. Set by using spin buttons or inputting numbers directly.



Makes an interval longer.

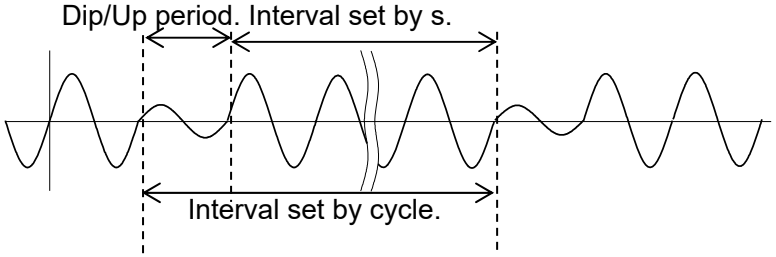
Setting by cycle is selected.

Makes an interval shorter.

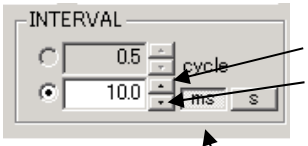


Setting by s is selected.

An interval set by cycle is including a Dip/Up period. Therefore, an interval shorter than a Dip/Up period is unavailable.



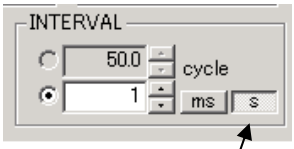
- Setting [INTERVAL] (In case of selecting [ASYNC])
  [INTERVAL]: Sets an interval between 2 Dip/Ups. The setting unit is ms or s. In case of ms, setting 0.2-100,000.00 (0.1 step) ms is available. In case of s, setting 1-100 (1 s step) s is available. In this case, an interval is not including a Dip/Up period. Set by using spin buttons or inputting numbers directly.



Makes an interval longer.

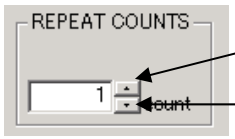
Makes an interval shorter.

Setting by ms is selected.



Setting by s is selected.

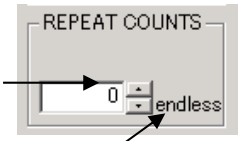
- Setting [REPEAT COUNTS]
  Sets how many Dip/Ups will be repeated. Setting 1-1,000 times is available. In case of setting “0”, repeats endlessly. Set by using spin buttons or inputting the times directly.



Makes repeated times more.

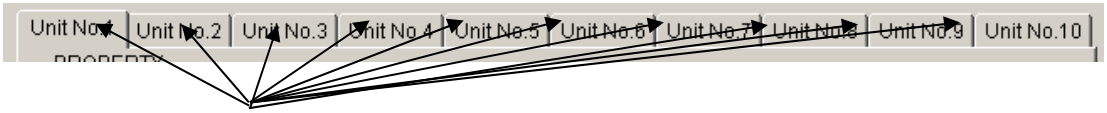
Makes repeated times less.

Input 0: endless repeat



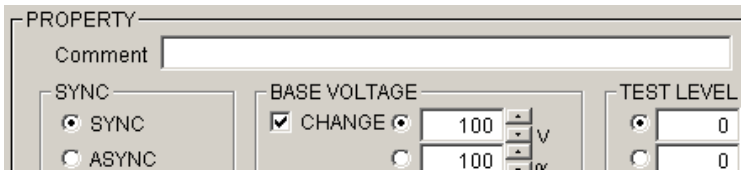
Message of [endless]

- Setting plural kinds of tests
  10 kinds of tests are available. Click tab and set test items.

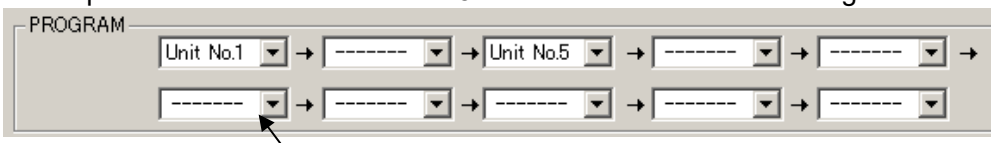


Test Unit selection tab

- Inputting comments to each test unit
  Can input and save comments in each unit (Similar with test settings). To 100 characters is available.

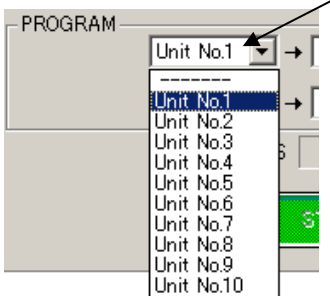


- Designating executing tests and their order
  Set which test units will be executed and their executing order.
  The example as under: Executes 1 and 5 in this order. "------": No settings.

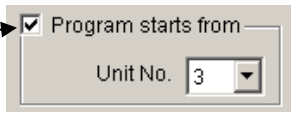


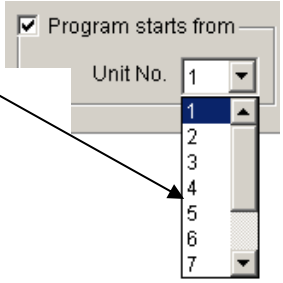
Indication button of test units

Click the test unit No to be executed.



- Designating test starting point
  Executing the test from the halfway of the order is available.
  Check [Program starts from] and select the order to be started execution from the combo-box.

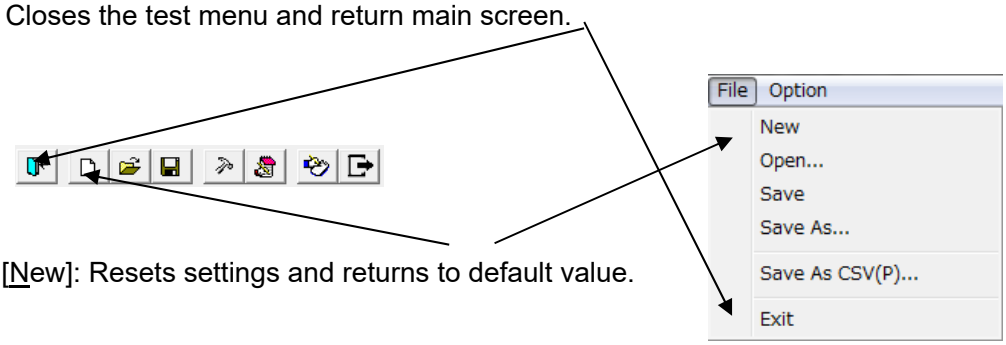




In the upper right case, tests will be executed from the third one.

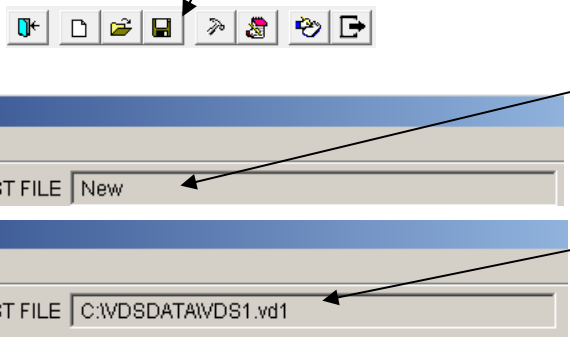
- Tool bar buttons and menu
  Tool bar buttons: Executing the functions, for example, file menu. Menu items of the tool bar are displayed by graphic image.

- Closing a test and initialization of settings
  [Exit]: Closes the test menu and return main screen.



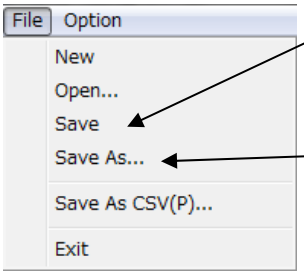
[New]: Resets settings and returns to default value.

- Saving settings
  Saves the present settings.
  In case of read in files, overwrites them. In case of setting newly, saves them with naming or designating.



Case of new setting

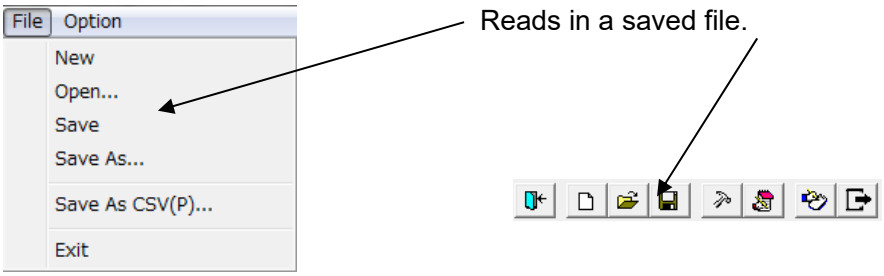
In case of read in files, displays the file's name.



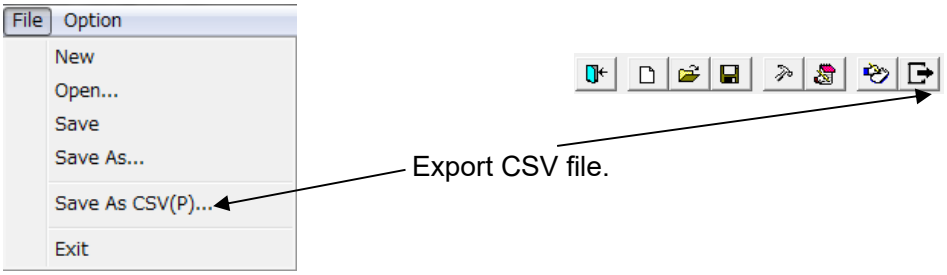
In case of selecting [Save], overwrites the file, also.
(Only in case of not reading in any files, names and saves it as a new file.)

[Save As]: Names the file and save it.
(In case of the read in file, makes a new file.)

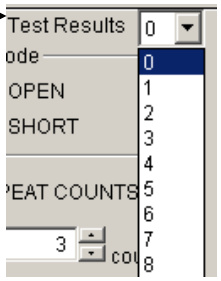
- Reading in saved files

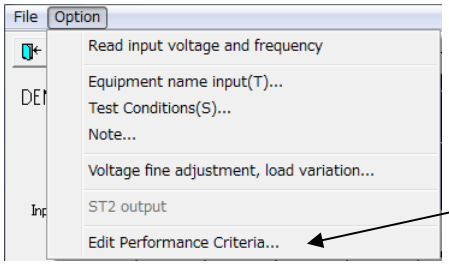


- [Save As CSV(P)…] (To export CSV file)
  Export test settings in CSV format.
  *Refer [6.4. CSV File Export].



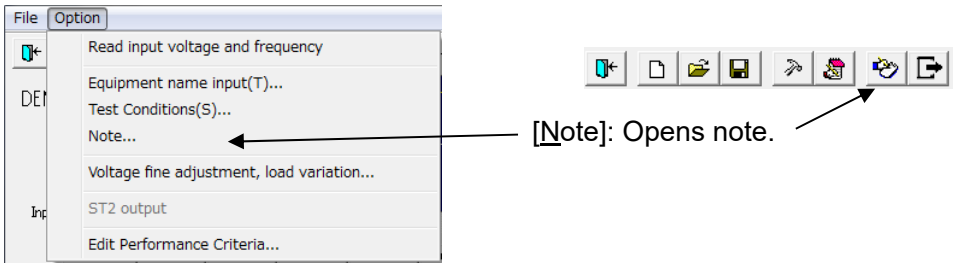
- Taking test result into a test report.
  Select from [Test Results] combo-box.
  “0” means blank. 1-4 parallels A-D.
  By editing the performance criteria,
  5-8 can be edited freely.



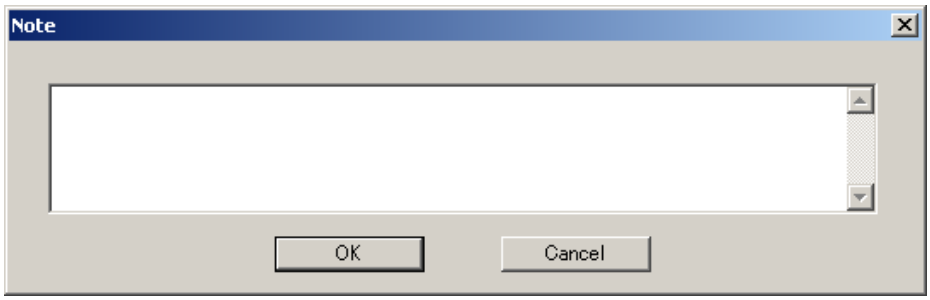


*Refer [6.3.14 Edit Performance Criteria].

- Inputting comments into note
  Can input comments in each test setting file and save them when settings are set (to 1,024 characters).

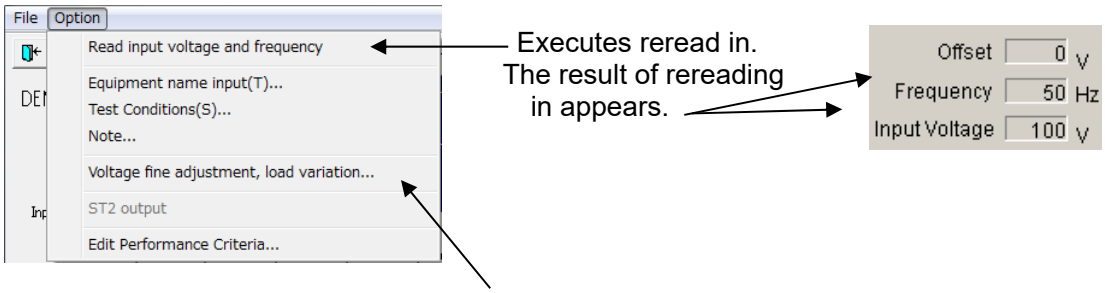


Note box with <OK> button and <Cancel> button.



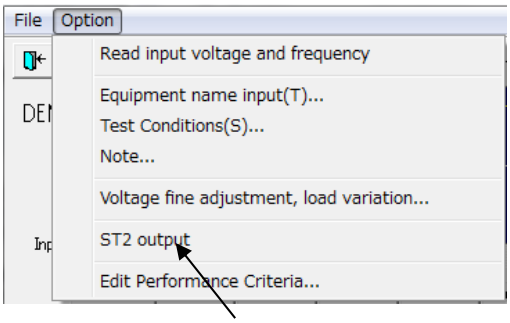
After inputting comments and editing, finish by <OK>.
<Cancel>: Finishes with editing invalid.

- Rereading in input voltage and frequency. Adjusting voltage and setting load variation.
  Rereads in the input voltage and frequency when IEC test screen opens. In case of changing the voltage and/or the frequency after, rereads them in to modify the values to the situation as the VDS-2002.

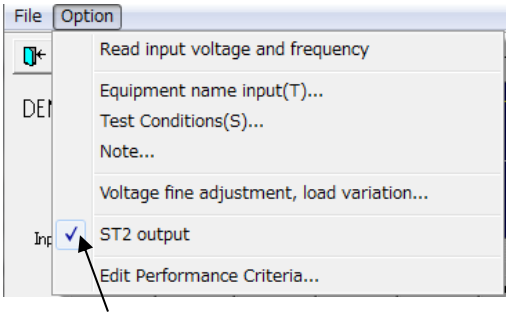


*Refer [6.3.13 Voltage Fine Adjustment & Load Variation]

- Monitoring [TEST LEVEL] setting
  Outputs [TEST LEVEL] set value to EUT OUT. This operation is available while Line is ON.
  Used for monitoring actual output vale.
  Whether [TEST LEVEL] or [BASE VOLTAGE] is outputting can be confirmed as the below.

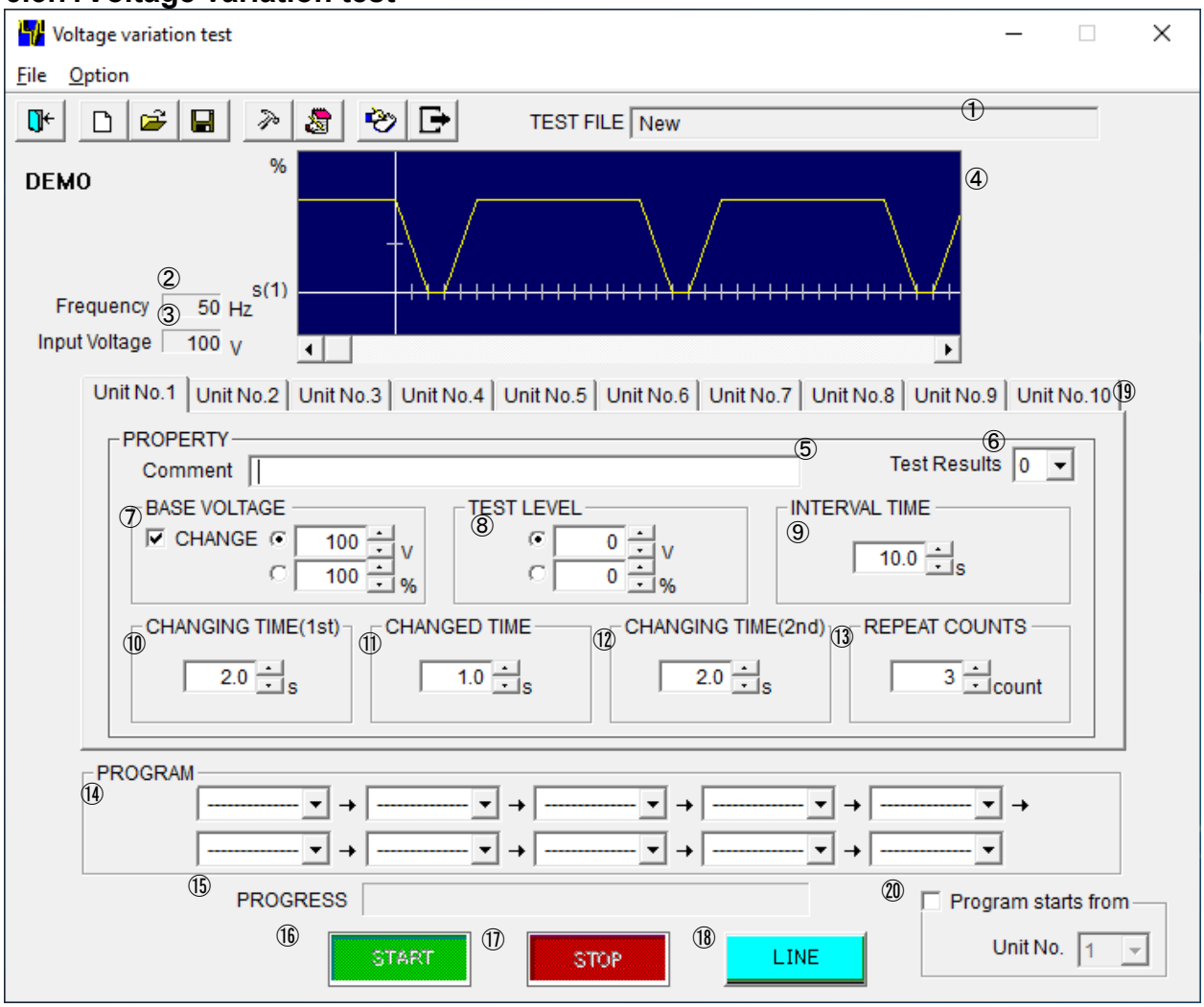


[BASE VOLTAGE] output



[TEST LEVEL] output

6.3.7. Voltage variation test



① [TEST FILE]
Shows the current file name.

② [Frequency]
Shows the frequency of the EUT supply input.

③ [Input Voltage]
Shows the voltage of the EUT supply input. Actual output voltage from this instrument to the EUT can be varied according to [BASE VOLTAGE] setting.

④ [Graphical display]
Represents a simulated waveform based on parameter settings. This waveform cannot be changed by directly manipulating the graph section. This waveform does not exactly coincide with the actual output.

⑤ [Comment]
Free memo space to comment on the current Unit No. The area has 100 characters space.

⑥ [Test Results]
Selects the test result from the performance criteria 0-8.

⑦ [BASE VOLTAGE]
Sets the output voltage supplying EUT or the ratio of output to the input voltage. When check box [CHANGE] is checked, a range from 10 V to 120% of the input voltage can be set.
※ Setting lower than 10 V can be done but the accuracy cannot be guaranteed.

⑧ [TEST LEVEL]
Sets the test level by the ratio to [BASE VOLTAGE] (from 0% to 120%) or by the value (from 0 or 10 V to 1.2 times of [Input Voltage]).
※ Condition: Only in the range of [CHANGING TIME].

⑨ [INTERVAL TIME]
Sets the interval between each Variation from 1 to 100 s

⑩ [CHANGING TIME(1st)]
Sets the required time for the output voltage to vary from [BASE VOLTAGE] to [TEST LEVEL]. The allowable setting is 0.1 to 10 s.
※ The fastest slew rate is 10%/0.1s change of the input.

⑪ [CHANGED TIME]
Sets the duration where the output voltage remains constant to the voltage set on [TEST LEVEL]. The allowable setting is 0 to 10 s.

⑫ [CHANGING TIME(2nd)]
Sets the required time for the output voltage to return to the BASE VOLTAGE from the voltage set on [TEST LEVEL]. The allowable setting is 0.1 to 10 s.
※ The fastest slew rate is 10%/0.1s change of the input.

⑬ [REPEAT COUNTS]
Sets the number of repetitions (from 1 to 1,000). Setting to 0 causes the program to run the test endlessly.

⑭ [PROGRAM]
Sets the sequence of executing different Unit Nos. The arrows indicate the executing part of the sequence. Unselected boxes are automatically skipped midstream and the Unit No. selected on the next box is executed.

⑮ [PROGRESS]
Indicates the test's progress situation.

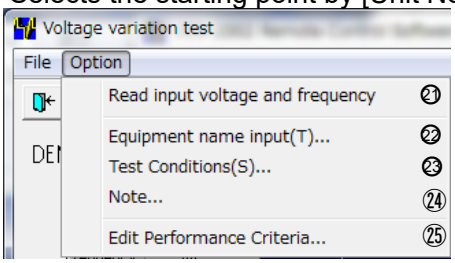
⑯ <START> button.
Starts the test. This button is operative only when the LINE is on.

⑰ <STOP> button
Stops the test. This button is operative only when the LINE and START are on.

⑱ <LINE> button
Turns on and off the EUT supply LINE. When the LINE button pressed, power is supplied to the EUT. Turning off the LINE during the test run terminates the test and power supply to the EUT.

⑲ Unit No.1～10
Sets and saves 10 test steps (Unit) maximum.

⑳ [Program starts from]
Selects the starting point by [Unit No.]



㉑ [Read input voltage and frequency]
Reads the input voltage and frequency of the EUT supply. The read in value indicates②③.

㉒ [Equipment name input(T)…]
Enters the serial number of your instrument.

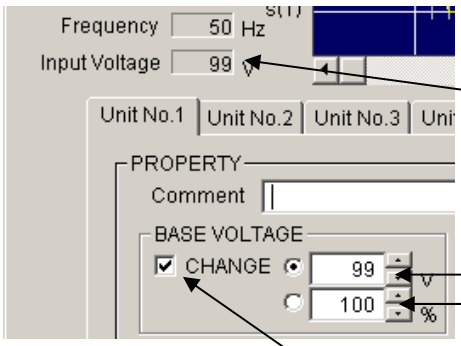
㉓ [Test Conditions(S)…]
Enter information pertinent to the test.

㉔ [Note...]
Opens a dialog box where a memo can be entered. The input area has 1,024 characters.

㉕ [Edit Performance Criteria]
Opens a dialog box to set and edit the performance criteria.

6.3.8. Voltage variation test (Details)

- Setting [BASE VOLTAGE]
  In case of setting [BASE VOLTAGE](rated voltage) different from [Input Voltage]



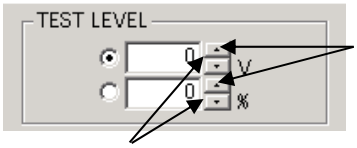
[Input Voltage]: Indicates the present EUT supplying voltage.

Set by the voltage value.
Set by the ratio to [Input voltage]

Check here and [CHANGE] is available.

Setting: From 10 V to 120% of [Input Voltage] is available (in the above example: to 120%) by using spin buttons or inputting the value.
[BASE VOLTAGE] 10 V – 240 V (for the rated voltage 10 V – 240 V EUT) is available, if [Input Voltage] is 200 V.
*No check in [CHANGE]: Direct mode. Outputs input voltage directly not through slide transformer.
*Check in [CHANGE]: Sensing mode. Outputs input voltage indirectly corrected through slide transformer.

- Setting [TEST LEVEL]
  Sets [TEST LEVEL] by inputting the voltage value or the ratio to [BASE VOLTAGE] (Similar way with setting [BASE VOLTAGE]) by using spin buttons or inputting the value directly.

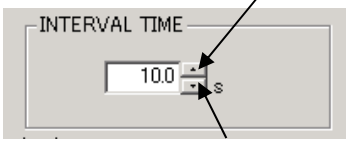


The buttons make [TEST LEVEL] higher.

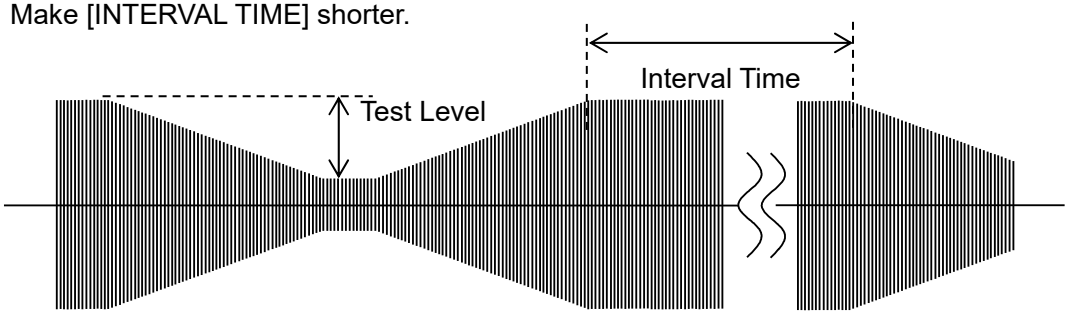
The buttons make [TEST LEVEL] lower.

- Setting [INTERVAL TIME]
  Set [INTERVAL TIME] between voltage variations.

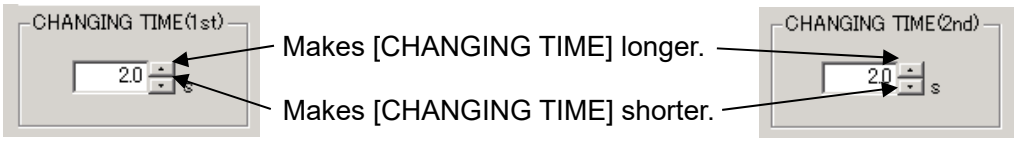
Make [INTERVAL TIME] longer,



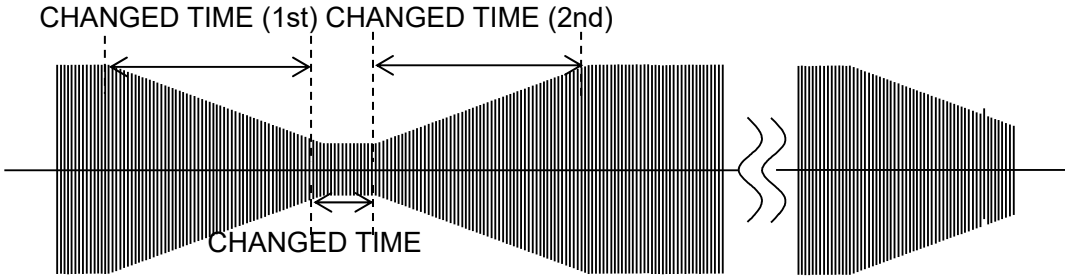
Make [INTERVAL TIME] shorter.



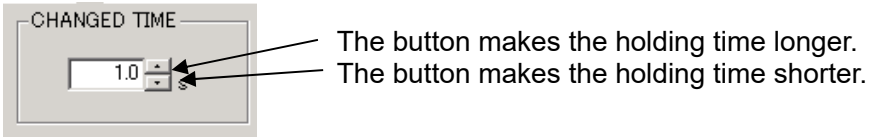
- Setting [CHANGING TIME]
  [CHANGING TIME (1st)]: Time from the set [BASE VOLTAGE] to the set [TEST LEVEL].
  [CHANGING TIME (2nd)]: Time from the set [TEST LEVEL] to the set [BASIC VOLTAGE].
  Available time is 0.1~10.0 s.
  Both can be set by using spin buttons or inputting the value directly.



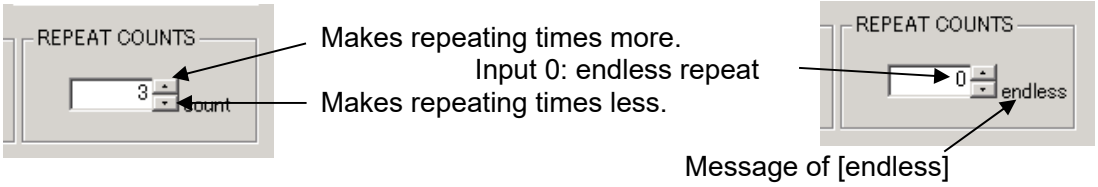
  * Setting [CHANGING TIME] is limited by varied voltage value.
    Varying voltage value proportional 10% to EUT supplying voltage requires 0.1 seconds. It means that, in case of 200 V EUT supplying voltage, varying 20 V requires at least 0.1 seconds.



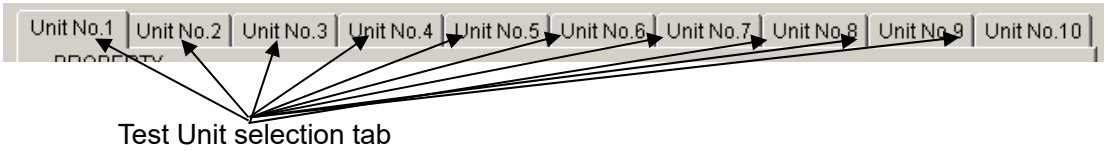
- Setting [CHANGED TIME]
  [CHANGED TIME]: Time holding a varied voltage. Setting 0.1-10.0 second is available.
  Sets by using spin buttons or inputting the time directly.



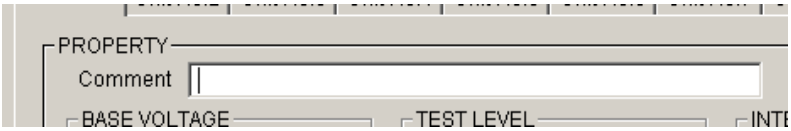
- Setting [REPEAT COUNTS]
  Sets how many times the voltage will be varied. 1-1000 times is available. In case of setting “0”, repeats endlessly. Sets by using spin buttons or inputting the times directly.



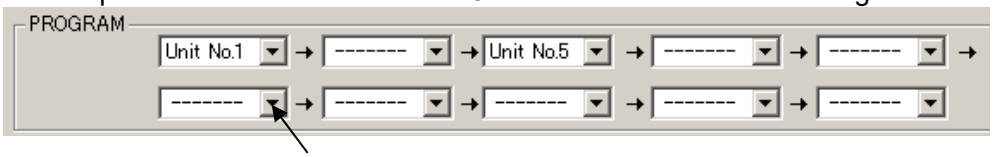
- Setting plural kinds of tests
  10 kinds of tests are available. Click tab and set test items.

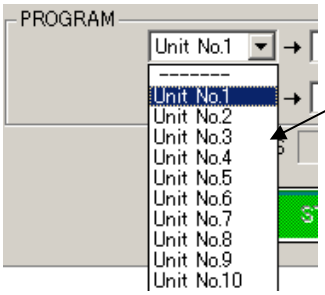


- Inputting comments to each test unit
  Can input and save comments in each unit (Similar with test settings). To 100 characters is available.

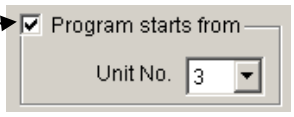


- Designating executing tests and their order
  Set which test units will be executed and their executing order.
  The example as under: Executes 1 and 5 in this order. "------": No settings.

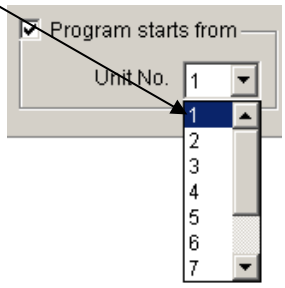




- Designating test starting point
  Executing the test from the halfway of the order is available.
  Check [Program starts from] and select the order to be started execution from the combo-box.

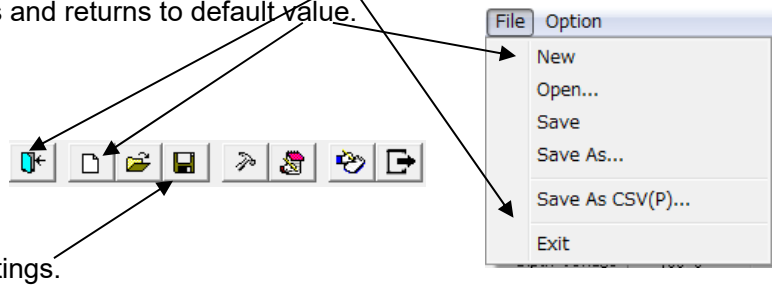


  In the upper right case, tests will be executed from the third one.

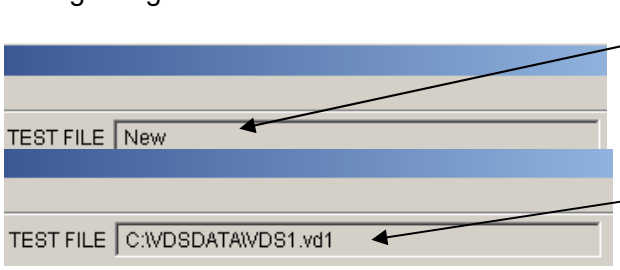


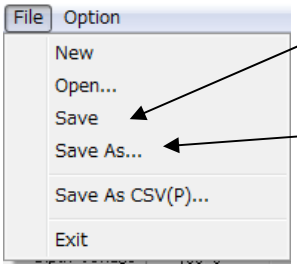
- Tool bar buttons and menu
  Tool bar buttons: Executing the functions, for example, file menu. Menu items of the tool bar are displayed by graphic image.

- Closing a test and initialization of settings
  [Exit]: Closes the test menu and return main screen.
  [New]: Resets settings and returns to default value.



- Saving settings
  Saves the present settings.
  In case of read in files, overwrites them. In case of setting newly, saves them with naming or designating.

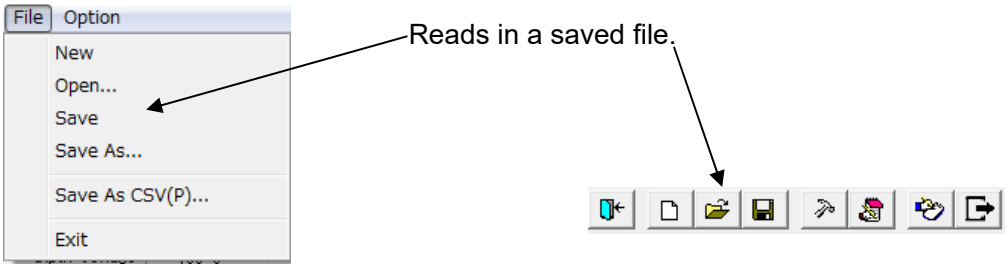




In case of selecting [Save], overwrites the file, also.
(Only in case of not reading in any files, names and saves it as a new file.)

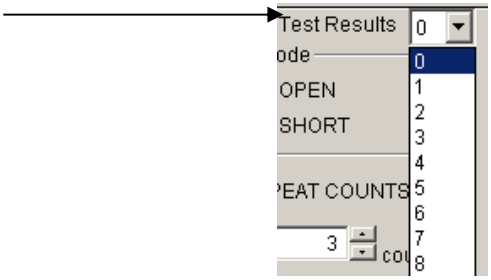
[Save As]: Names the file and save it.
(In case of the read in file, makes a new file.)

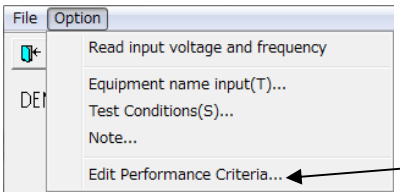
- Reading in saved files



- [Save As CSV(P)…] (To export CSV file)
  Export test settings in CSV format.
  *Refer [6.4. CSV File Export].

- Taking test result into a test report.
  Select from [Test Results] combo-box.
  “0” means blank. 1-4 parallels A-D.
  By editing the performance criteria,
  5-8 can be edited freely.

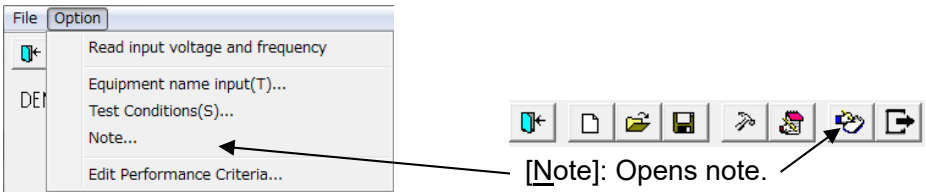




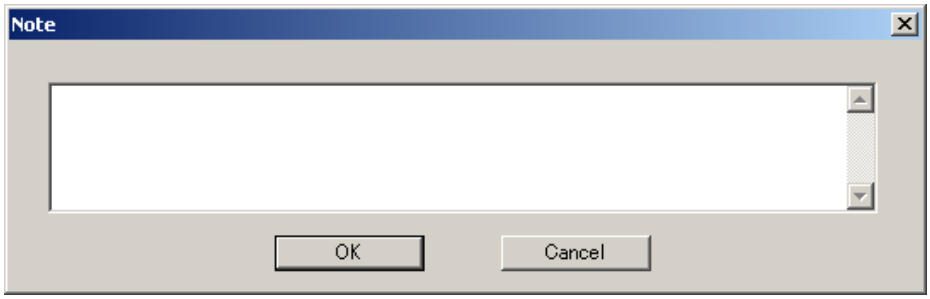
[Edit Performance Criteria]: edits the performance criteria.

*Refer [6.3.14 Edit Performance Criteria]

- Inputting comments into note
  Can input comments in each test setting file and save them when settings are set (to 1,024 characters).

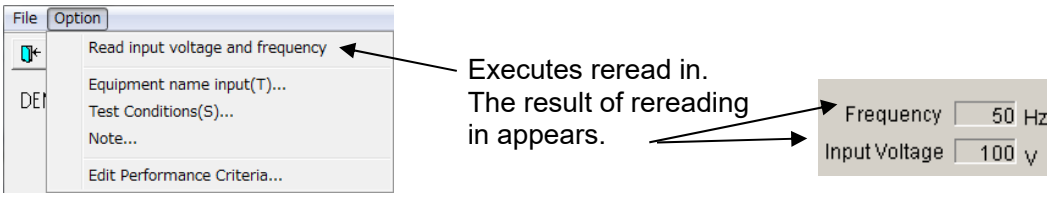


Note box with <OK> button and <Cancel> button.

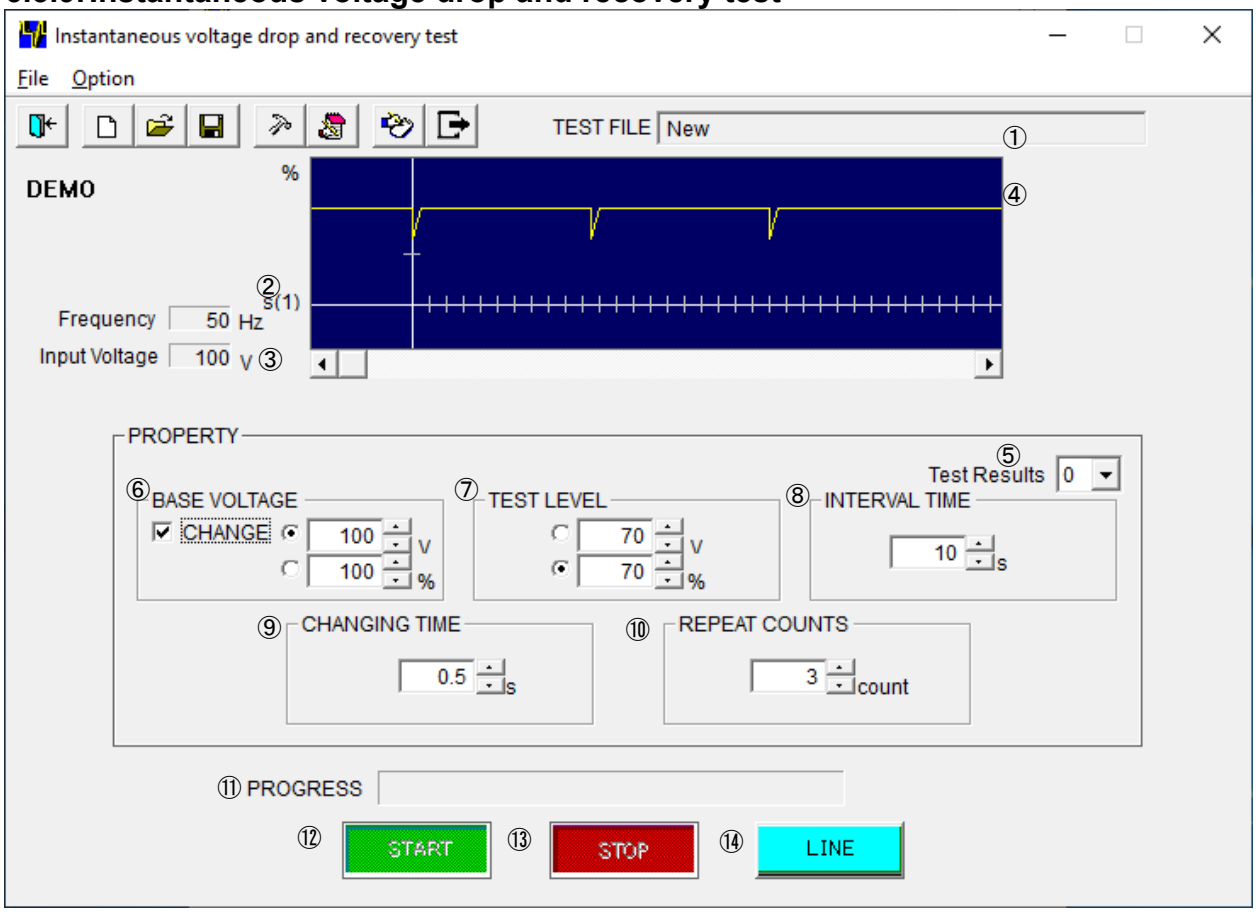


After inputting comments and editing, finish by <OK>.
<Cancel>: Finishes with editing invalid.

- Rereading in input voltage and frequency. Adjusting voltage and setting load variation.
  Rereads in the input voltage and frequency when IEC test screen opens. In case of changing the voltage and/or the frequency after, rereads them in to modify the values to the situation as the VDS-2002.



6.3.9. Instantaneous voltage drop and recovery test



① [TEST FILE]
Shows the current file name.

② [Frequency]
Shows the frequency of the EUT supply input.

③ [Input Voltage]
Shows the voltage of the EUT supply input. Actual output voltage from this instrument to the EUT can be varied according to [BASE VOLTAGE] setting.

④ [Graphical display]
Represents a simulated waveform based on parameter settings. This waveform cannot be changed by directly manipulating the graph section. This waveform does not exactly coincide with the actual output.

⑤ [Test Results]
Selects the test result from the performance criteria 0-8.

⑥ [BASE VOLTAGE]
Sets the output voltage supplying EUT or the ratio of output to the input voltage. When check box [CHANGE] is checked, a range from 10 V to 120% of the input voltage can be set.
※ Setting lower than 10V can be done but the accuracy cannot be guaranteed.

⑦ [TEST LEVEL]
Sets the test level by the ratio to [BASE VOLTAGE] (from 0% to 120%) or by the value (from 0 or 10 V to 1.2 times of [Input Voltage]).
※ Condition: Only in the range of [CHANGING TIME].

⑧ [INTERVAL TIME]
Sets the interval between each Variation from 3 to 100 s.

⑨ [CHANGING TIME]
Sets the required time for the output voltage to vary from [BASE VOLTAGE] to [TEST LEVEL]. The allowable setting is 0.1 to 10 s.
※ The fastest slew rate is 10%/0.1s change of the input.

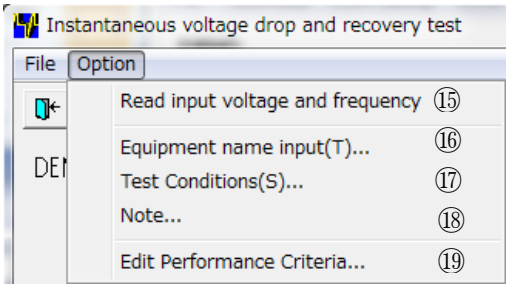
⑩ [REPEAT COUNTS]
Sets the number of repetitions (from 1 to 1,000). Setting to 0 causes the program to run the test endlessly.

⑪ [PROGRESS]
Indicates the test's progress situation.

⑫ <START> button.
Starts the test. This button is operative only when the LINE is on.

⑬ <STOP> button
Stops the test. This button is operative only when the LINE and START are on.

⑭ <LINE> button
Turns on and off the EUT supply LINE. When the LINE button pressed, power is supplied to the EUT. Turning off the LINE during the test run terminates the test and power supply to the EUT.



⑮ [Read input voltage and frequency]
Reads the input voltage and frequency of the EUT supply. The read in value indicates②③.

⑯ [Equipment name input(T)…]
Enters the serial number of your instrument.

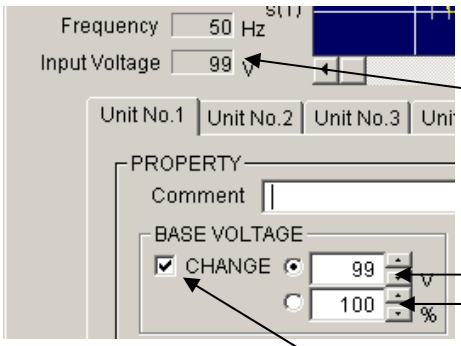
⑰ [Test Conditions(S)…]
Enter information pertinent to the test.

⑱ [Note...]
Opens a dialog box where a memo can be entered. The input area has 1,024 characters.

⑲ [Edit Performance Criteria]
Opens a dialog box to set and edit the performance criteria.

6.3.10. Instantaneous voltage drop and recovery test (Details)

- Setting [BASE VOLTAGE]
  In case of setting [BASE VOLTAGE](rated voltage) different from [Input Voltage]



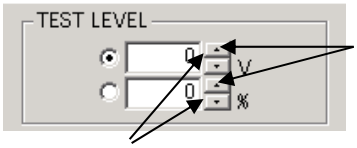
[Input Voltage]: Indicates the present EUT supplying voltage.

Set by the voltage value.
Set by the ratio to [Input voltage]

Check here and [CHANGE] is available.

Setting: From 10 V to 120% of [Input Voltage] is available (in the above example: to 120%) by using spin buttons or inputting the value.
[BASE VOLTAGE] 10 V – 240 V (for the rated voltage 10 V – 240 V EUT) is available, if [Input Voltage] is 200 V.
*****No check in [CHANGE]: Direct mode. Outputs input voltage directly not through slide transformer.
*Check in [CHANGE]: Sensing mode. Outputs input voltage indirectly corrected through slide transformer.

- Setting [TEST LEVEL]
  Sets [TEST LEVEL] by inputting the voltage value or the ratio to [BASE VOLTAGE] (Similar way with setting [BASE VOLTAGE]) by using spin buttons or inputting the value directly.

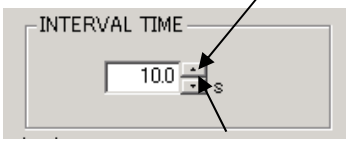


The buttons make [TEST LEVEL] higher.

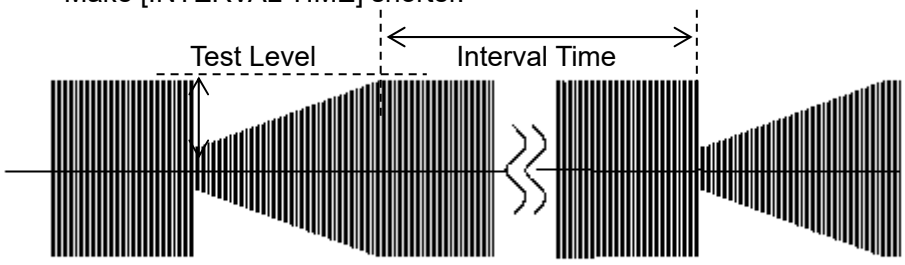
The buttons make [TEST LEVEL] lower.

- Setting [INTERVAL TIME]
  Set [INTERVAL TIME] between voltage variations.

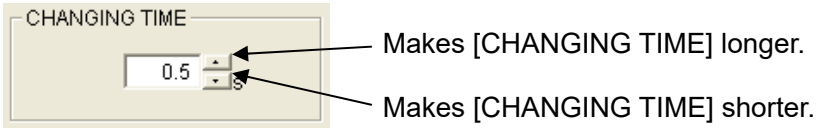
Make [INTERVAL TIME] longer,



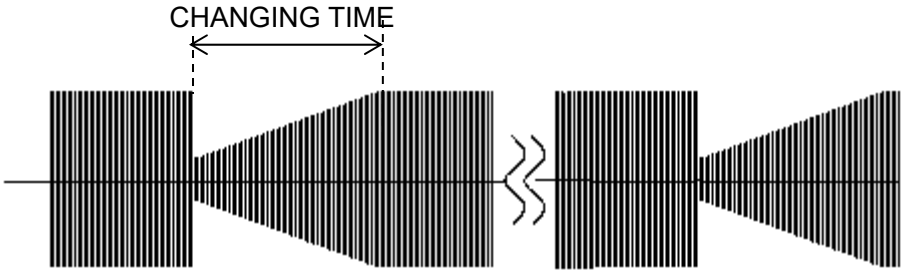
Make [INTERVAL TIME] shorter.



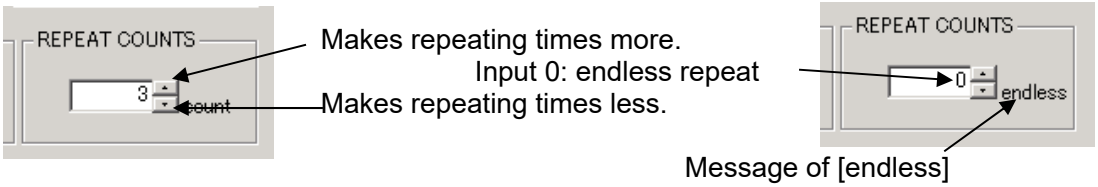
- Setting [CHANGING TIME]
  Set time from the set [TEST LEVEL] to the set [BASE VOLTAGE].
  Available time is 0.1~10.0 s.
  Use spin buttons or input the value directly.



  * Setting [CHANGING TIME] is limited by varied voltage value.
    Varying voltage value proportional 10% to EUT supplying voltage requires 0.1 seconds. It means that, in case of 200 V EUT supplying voltage, varying 20 V requires at least 0.1 seconds.

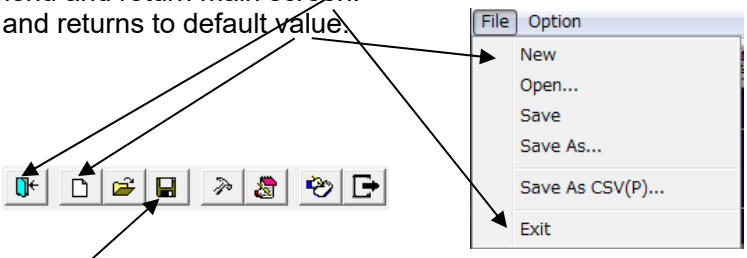


- Setting [REPEAT COUNTS]
  Sets how many times the voltage will be varied. 1-1000 times is available. In case of setting “0”, repeats endlessly. Sets by using spin buttons or inputting the times directly.

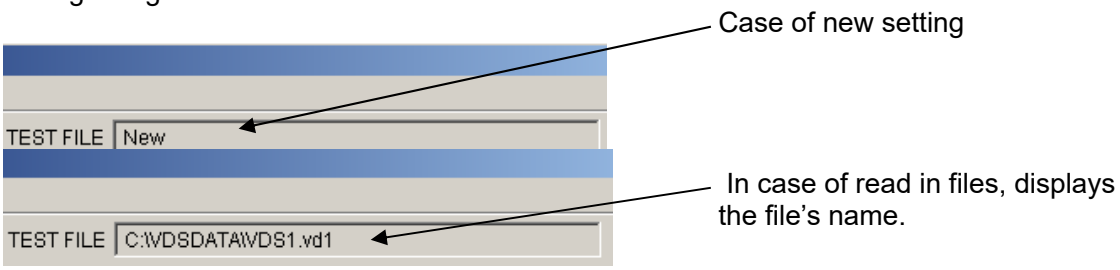


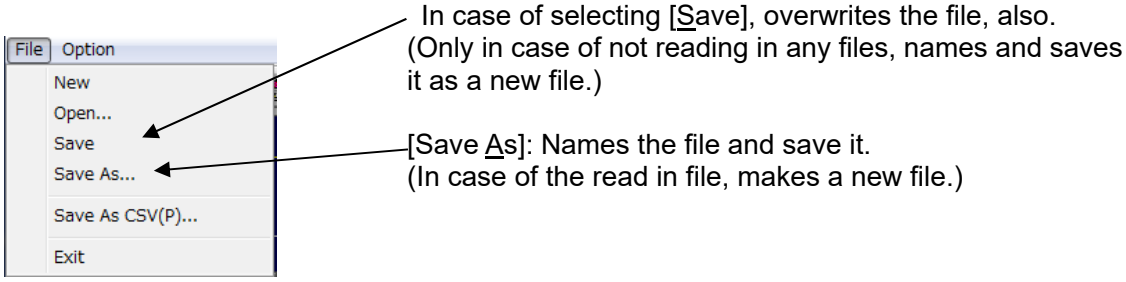
- Tool bar buttons and menu
  Tool bar buttons: Executing the functions, for example, file menu. Menu items of the tool bar are displayed by graphic image.

- Closing a test and initialization of settings
  [Exit]: Closes the test menu and return main screen.
  [New]: Resets settings and returns to default value.

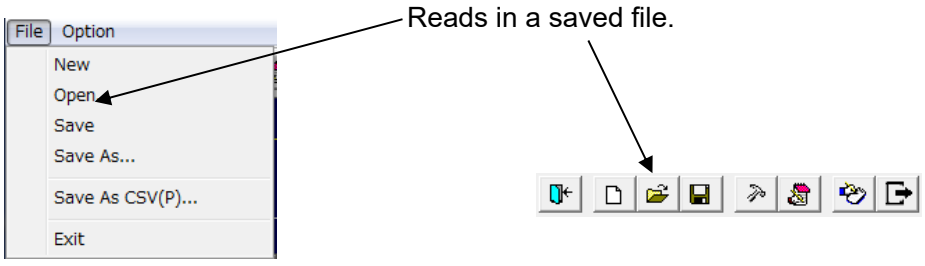


- Saving settings
  Saves the present settings.
  In case of read in files, overwrites them. In case of setting newly, saves them with naming or designating.



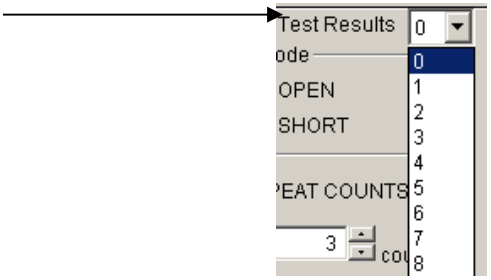


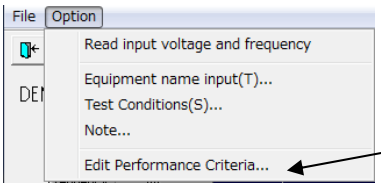
- Reading in saved files



- [Save As CSV(P)…] (To export CSV file)
  Export test settings in CSV format.
  *Refer [6.4. CSV File Export].

- Taking test result into a test report.
  Select from [Test Results] combo-box.
  “0” means blank. 1-4 parallels A-D.
  By editing the performance criteria,
  5-8 can be edited freely.

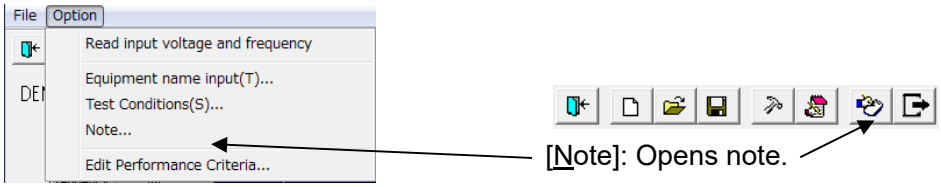




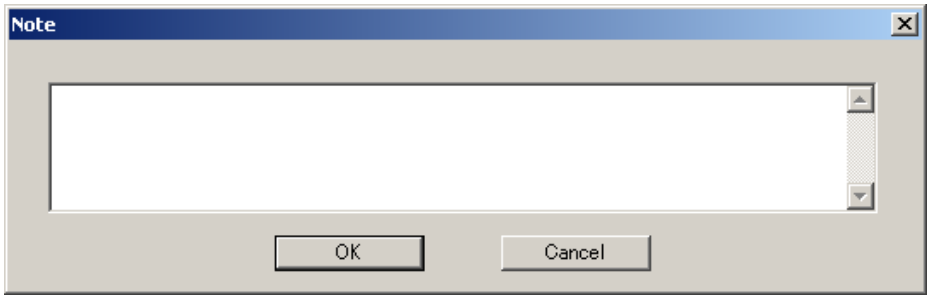
[Edit Performance Criteria]: edits the performance criteria.

*Refer [6.3.14 Edit Performance Criteria].

- Inputting comments into note
  Can input comments in each test setting file and save them when settings are set (to 1,024 characters).

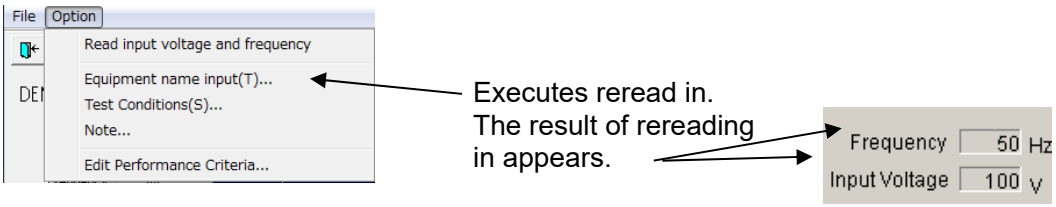


Note box with <OK> button and <Cancel> button.

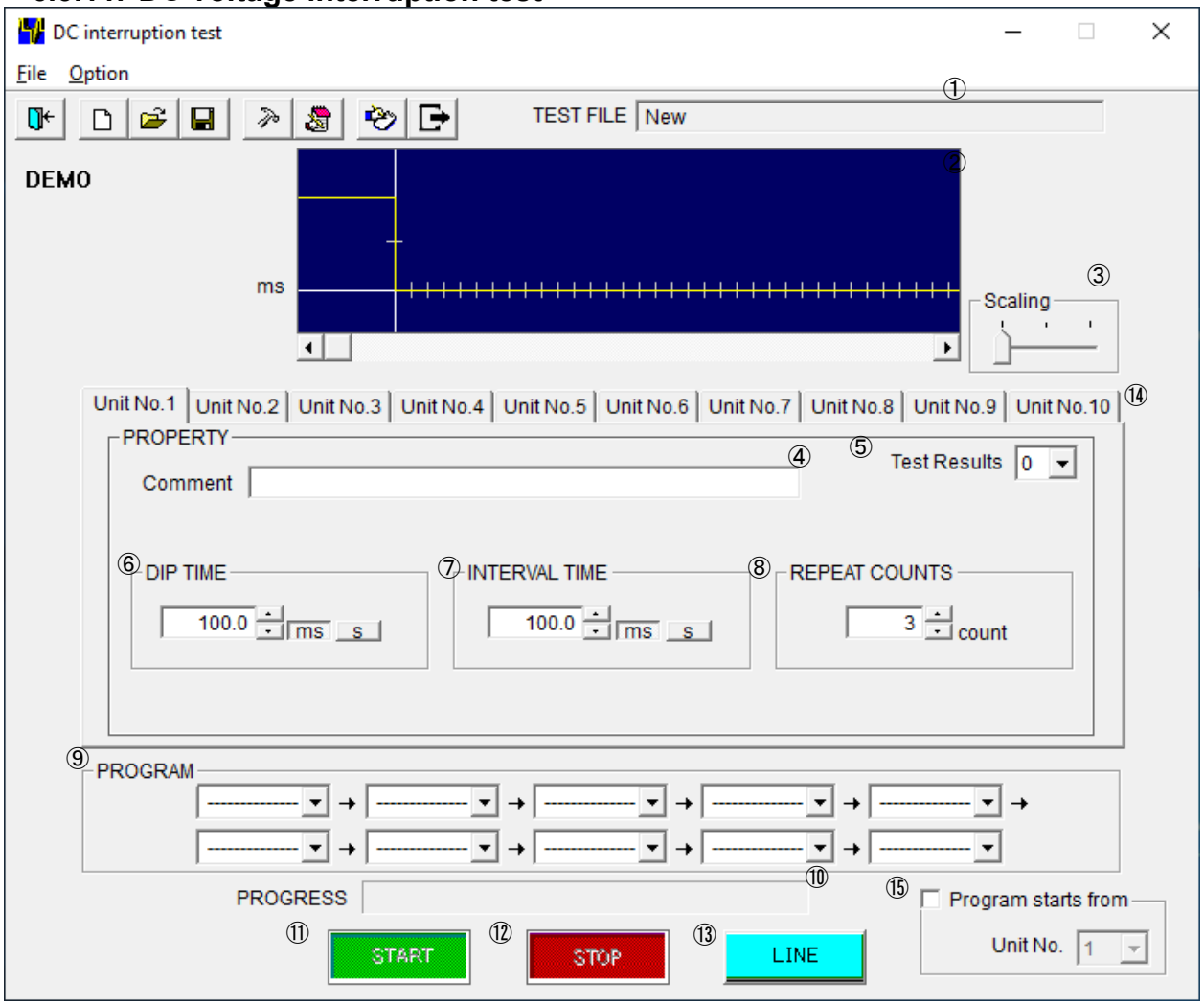


After inputting comments and editing, finish by <OK>.
<Cancel>: Finishes with editing invalid.

- Rereading in input voltage and frequency. Adjusting voltage and setting load variation.
  Rereads in the input voltage and frequency when IEC test screen opens. In case of changing the voltage and/or the frequency after, rereads them in to modify the values to the situation as the VDS-2002.



6.3.11. DC voltage interruption test



① [TEST FILE]
Shows the current file name.

② Graphical display
Represents a simulated waveform based on parameter settings. This waveform cannot be changed by directly manipulating the graph section. This waveform does not exactly coincide with the actual output.

③ [Scaling]
Sets multiplication factor of the time axis of the graph.

④ [Comment]
Free memo space to comment on the current Unit No. The area has 100 characters space.

⑤[Test Results]
Selects the test result from the performance criteria 0-8.

⑥ [DIP TIME]
Sets the DIP duration ranging from 0.1 to 100000.0 (ms) or 1 to 36000(s)

⑦ [INTERVAL TIME]
Sets the interval between each DIP from 0.1 to 100,000.0(s) or 1 to 36,000(s).

⑧ [REPEAT COUNTS]
Sets the number of repetitions. Setting from 1 to 100 times is available. Setting to 0 causes the program to run the test endlessly.

⑨ [PROGRAM]
Sets the sequence of executing different Unit Nos. The arrows show the sequence.
Unselected boxes are automatically skipped midstream and the Unit No. selected on the next box is executed.

⑩ [PROGRESS]
Indicates a percentage done to graphically represent the test progress. Cannot be changed by the user.

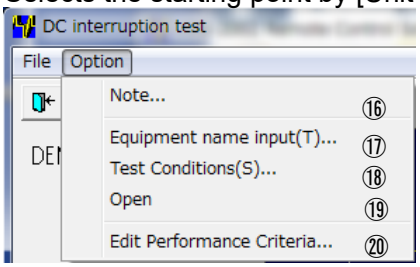
⑪ <START> button
Starts the test. This button is operative only when the LINE is on.

⑫ <STOP> button
Stops the test. This button is operative only when the LINE and START are on.

⑬ <LINE> button
Turns on and off the EUT supply LINE. When the LINE button pressed, power is supplied to the EUT. Turning off the LINE during the test run terminates the test and power supply to the EUT.

⑭ Unit No.1～10
Sets and saves 10 test steps (Unit) maximum.

⑮ [Program starts from]
Selects the starting point by [Unit No.]



⑯ [Note...]
Opens a dialog box where a memo can be entered. The input area has 1,024 characters.

⑰ [Equipment name input(T)…]
Enters the serial number of your instrument.

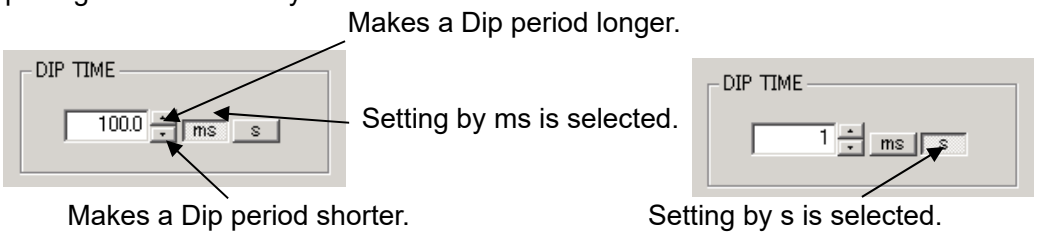
⑱ [Test Conditions(S)…]
Enter information pertinent to the test.

⑲ [Open]
The programs provides facilities to select output impedance during DC interruption
Open：selects the open circuit (high impedance) Checked on the left of the menu
Short：selects the short circuit. No check mark.

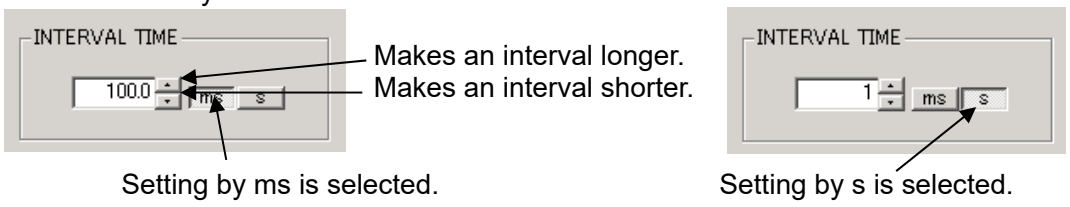
⑳ [Edit Performance Criteria]
Opens a dialog box to set and edit the performance criteria.

6.3.12. DC voltage interruption test (Details)

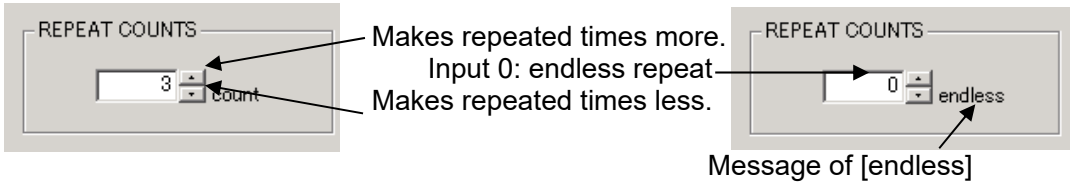
- Setting [DIP TIME]
  Sets a Dip period. The unit is ms or s. In case of ms, setting 0.2-100,000 (0.1 step) ms is available. In case of s, setting 1-36,000 (1 s step) s is available. Set by using spin buttons or inputting numbers directly.



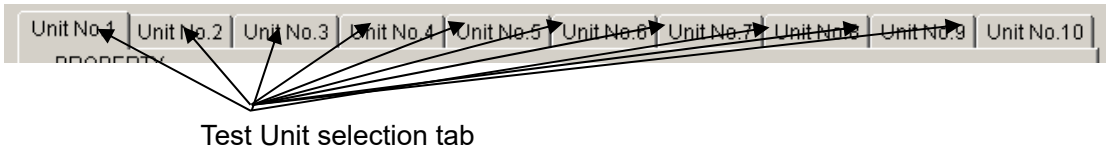
- Setting [INTERVAL TIME]
  [INTERVAL TIME]: Sets an interval between 2 Dips. The setting unit is ms or s. In case of ms, setting 0.2-100,000.00 (0.1 step) ms is available. In case of s, setting 1-100 (1 s step) s is available. An interval is not including a Dip period. Set by using spin buttons or inputting numbers directly.



- Setting [REPEAT COUNTS]
  Sets how many Dips will be repeated. Setting 1-1,000 times is available. In case of setting “0”, repeats endlessly. Set by using spin buttons or inputting the times directly.

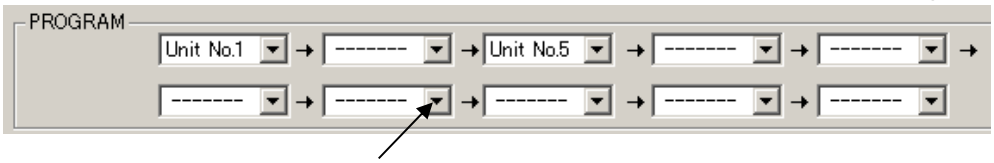


- Setting plural kinds of tests
  10 kinds of tests are available. Click tab and set test items.

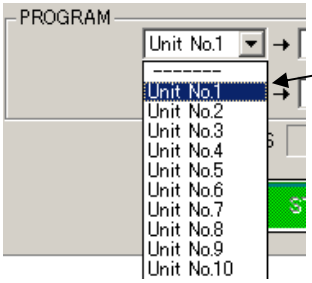


- Inputting comments to each test unit
  Can input and save comments in each unit (Similar with test settings). To 100 characters is available.

- Designating executing tests and their order
  Set which test units will be executed and their executing order.
  The example as under: Executes 1 and 5 in this order. “------”: No settings.



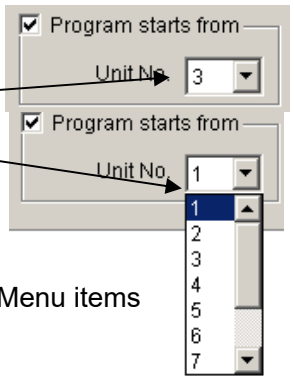
Indication button of test units



Click the test unit No to be executed.

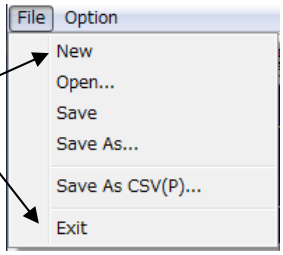
- Designating test starting point
  Executing the test from the halfway of the order is available.
  Check [Program starts from] and select the order to be started execution from the combo-box.

  In the right case, tests will be executed from the third one.



- Tool bar buttons and menu
  Tool bar buttons: Executing the functions, for example, file menu. Menu items of the tool bar are displayed by graphic image.

- Closing a test and initialization of settings
  [Exit]: Closes the test menu and return main screen.



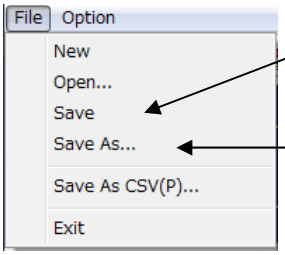
  [New]: Resets settings and returns to default value.

- Saving settings
  Saves the present settings.

  In case of read in files, overwrites them. In case of setting newly, saves them with naming or designating.

Case of new setting

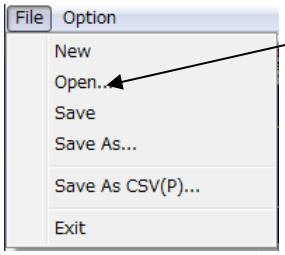
In case of read in files, displays the file's name.



In case of selecting [Save], overwrites the file, also.
(Only in case of not reading in any files, names and saves it as a new file.)

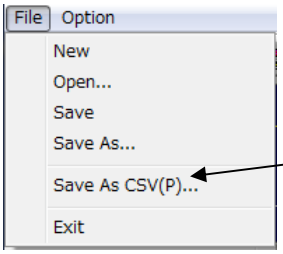
[Save As]: Names the file and save it.
(In case of the read in file, makes a new file.)

- Reading in saved files



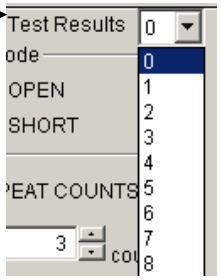
Reads in a saved file.

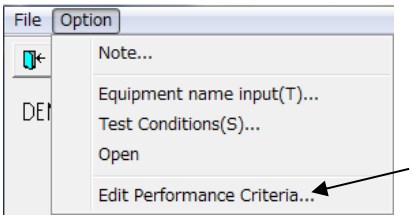
- [Save As CSV(P)…] (To export CSV file)
  Export test settings in CSV format.
  *Refer [6.4. CSV File Export].



Export CSV file.

- Taking test result into a test report.
  Select from [Test Results] combo-box.
  "0" means blank. 1-4 parallels A-D.
  By editing the performance criteria,
  5-8 can be edited freely.

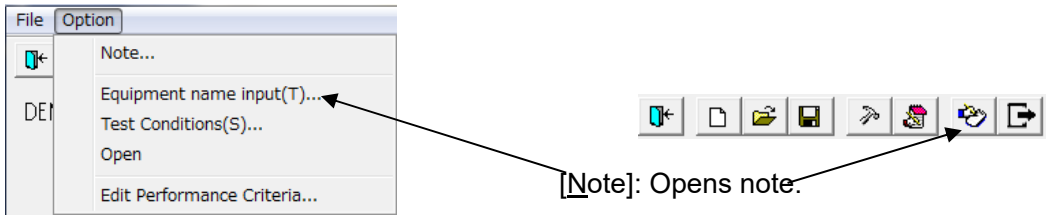




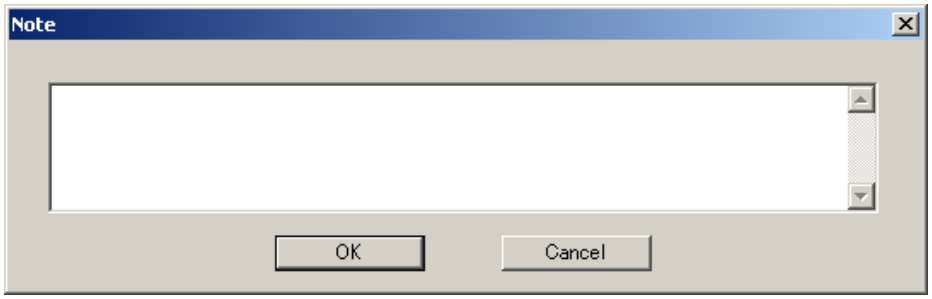
[Edit Performance Criteria]: edits the performance criteria.

*Refer [6.3.14 Edit Performance Criteria].

- Inputting comments into note
  Can input comments in each test setting file and save them when settings are set (to 1,024 characters).

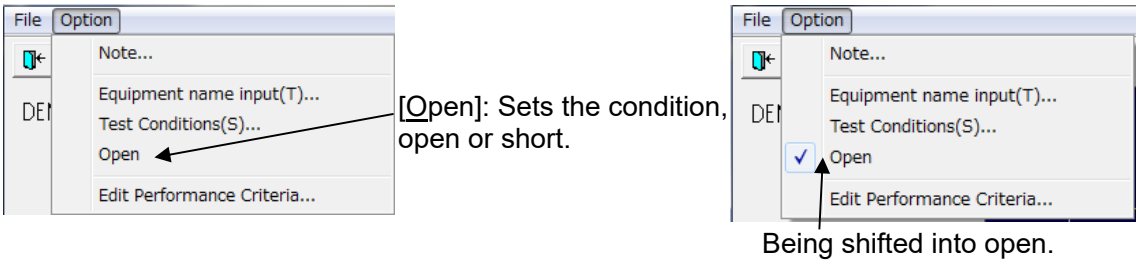


Note box with, <OK> button and <Cancel> button.



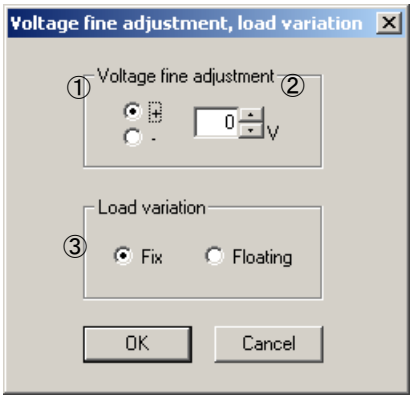
After inputting comments and editing, finish by <OK>.
<Cancel>: Finishes with editing invalid.

- Setting condition in DC Dip
  Sets whether open or short to the ground in DC Dip. The default is short. In case of setting open, [Open] is being checked.



6.3.13. Voltage Fine Adjustment & Load Variation

In the IEC 61000-4-11 test mode or in the Voltage dip test or in the Voltage variation test mode, voltage offset can be set and two types of motor controls are provided.

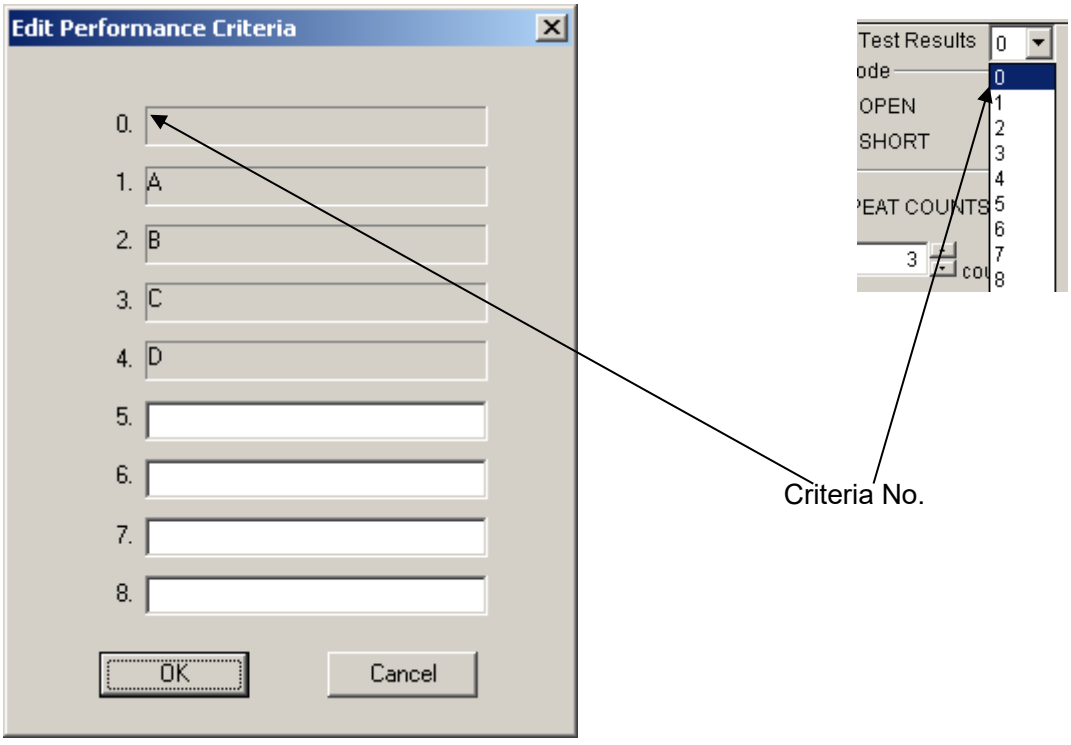


Voltage fine adjustment
① Selects the off-set polarity.
② Adjust up to +/-5 V.

Setting the output of load variation
③ Selects the motor control method.
[Fix] : Stops the motor upon starting the test.
[Floating] : Adjusts the motor by feedbacks from load variation to maintain a fixed level of output voltage.

6.3.14. Edit Performance Criteria

Editing performance criteria is available.
Can set and edit criteria No.5-8 to 32 characters. The set criteria are saved (no need to set in each test).
Refer the performance criteria in the IEC61000-4-11 standard regarding of the fixed concept 1-4 (A-D).



6.3.15. Test Execution

Except for the 3 types of test for [IEC-61000-4-11], the test execution dialog provides the facility to save 10 settings maximum (each setting referred to as “Unit”). Then the operator can make a test sequence by setting the order of test execution for these units. To do this, select the desired Units in the PROGRAM frame. During the test execution, the following signs will be blinking.

(1) LINE ON

When <LINE> button pressed, this sign turns on (alight) on the upper right of the screen to indicate that the LINE is on.

Alight

BASE VOLTAGE is outputted to EUT OUT.

(2) START

During testing, the Execution sign appears on the upper light of the screen and blinks to indicate that the test is in progress.

Blink

6.3.16. Tool bar

Closes the Test window.

Resets all settings to the defaults.

Opens a previously made test file.

Only files of the current mode of tests are available.

Save settings with its current file name.

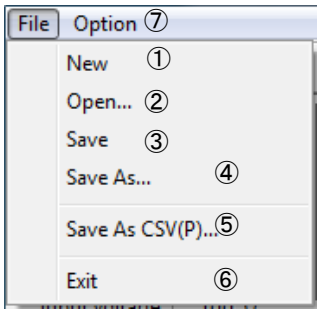
Enters the serial number of your instrument.

Enter information pertinent to the test.

Opens a dialog for memo.

Export test settings in CSV format.

6.3.17. Menu



① [New] : Resets all test parameter settings to the default values
② [Open...] : Opens a previously created test file.
③ [Save] : Save the current test with its current filename.
④ [Save As...] : Save the current test with a new filename.
⑤ [Save As CSV(P)...] : Export test settings in CSV format.
⑥ [Exit] : Closes the Test window.
⑦ [Option] : Option menu on each Test window has different sub-menus. Refer to the relevant sections.

※ A test file is test parameters settings made on each Test window.
※ Only this software program can handle test files. Direct edition causes this program not to work normally.

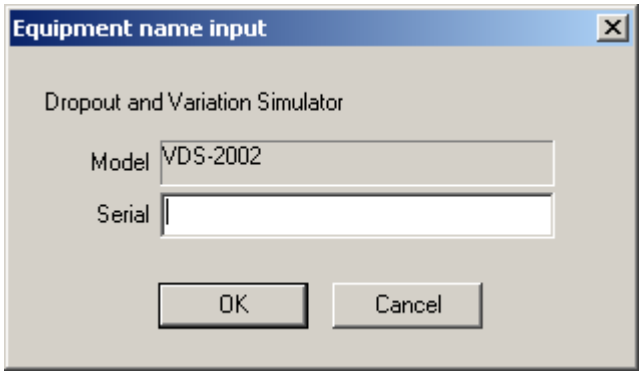
6.4. CSV File Export

Features

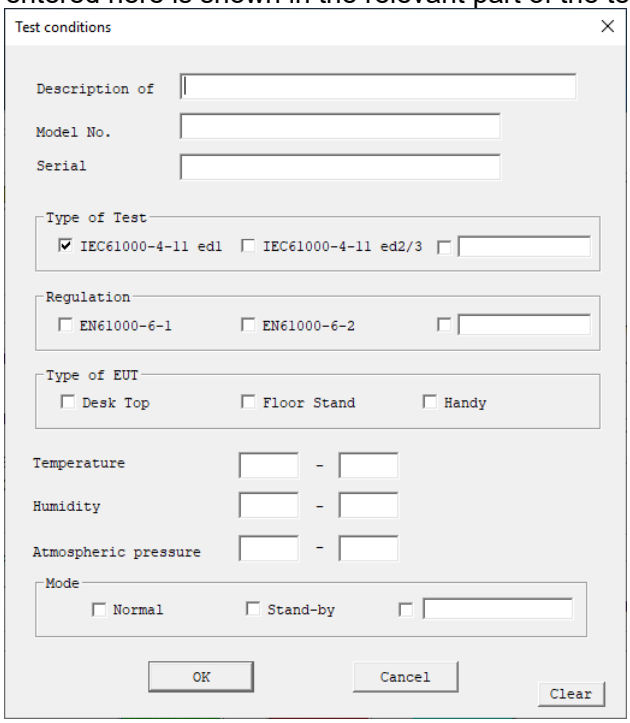
- Export test settings in CSV format.
- Shows test settings in the PROGRAM order.

	A	B	C	D
1	IEC-61000-4-11:1994 試験			
2	DATE :	2018/2/1		
3	Voltage dips, short interruptions and voltage variations Immunity Test Record.			
4				
5	Signed :			
6	Description of EUT :			
7	Model No. :			
8	Serial No. :			
9				
10	Type of Test :	[*] IEC 61000-4-11 Ed1	[ ] IEC 61000-4-11 Ed2	[ ]
11	Regulation :	[ ]EN 61000-6-1	[ ]EN 61000-6-2	[ ]
12	Type of EUT :	[ ] Desk Top	[ ] Floor Stand	[ ] Handy
13				
14	Test of Equipment :	Voltage Dip and Up Simulator	Model :	VDS-2002
15			Serial :	
16	Test Conditions.			
17	* Temperature :		-	
18	* Humidity :		-	
19	* Atmospheric Pressure:		-	
20	* Mode :	[ ] Normal	[ ]Stand-by	[ ]
21	Note :			
22				
23				
24			Input Voltage 100V	Frequency 50Hz
25	--PROGRAM--			
26	BASE VOLTAGE	TEST LEVEL	DIP PHASE	DIP CYCLES
27	*100V	0%	0deg	0.5cycle
28	100%	Short		

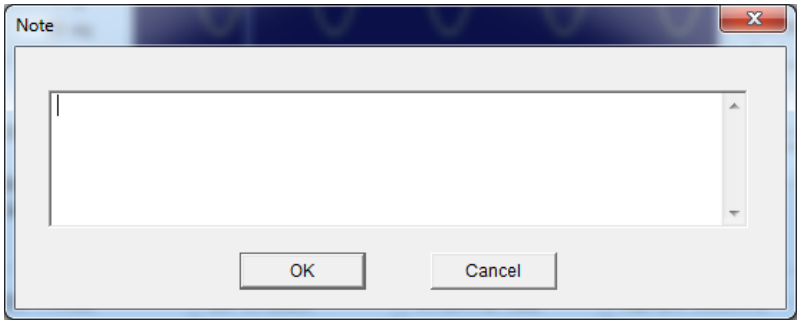
Enter the instrument serial number
The serial number entered is shown in the relevant column of the test report
This number is saved. This procedure will not be required unless the instrument is replaced.



Information entered here is shown in the relevant part of the test report.



Opens a dialog box where a memo can be entered. The input area has 1,024 characters.

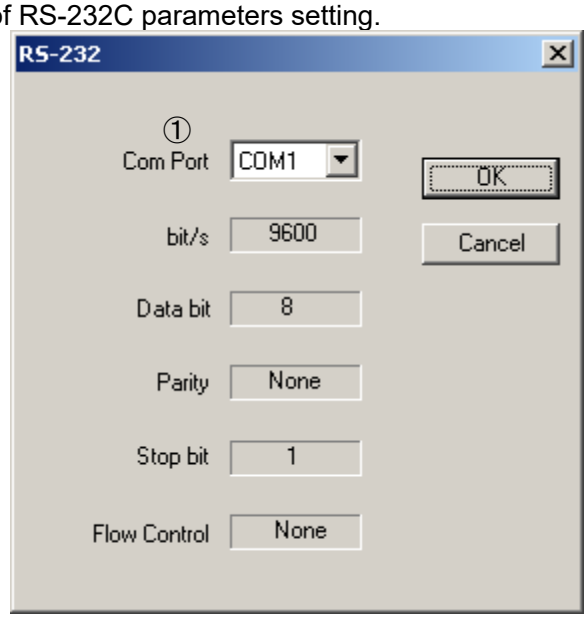


Export test settings in CSV format.

6.5. Communication set-up

Features: Com1, Com2. Com3 and Com4 are available as communication port.

- Displays a list of RS-232C parameters setting.



① Selects the Com port being connected to the VDS-2002 from the indicated Com ports.
This setting is saved. New setting will not be required unless the operator requires a different Com Port to be used.
Other items than ① are fixed and specific to this software program. The operator cannot change them.

7. OPERATING ENVIRONMENTS

OS Microsoft Windows 10 Operating System (English/Japanese version)
Microsoft Windows 11 Operating System (English/Japanese version)
CPU Dual core 2.4ghz or better
Display Resolution: More than 1024×768 dot

The following additional requirements also shall be met:

- Vacant serial port shall exist. (Either 1 port shall be occupied)
- The PC shall be connected to the VDS-2002 simulator before this program gets started. (The program gets started in demo mode when the PC is not connected to the instrument)
- Operation cannot be guaranteed when using online storage or software that uses cloud services.

8. Warranty

Warranty

A warranty is provided for the software produced by NoiseKen and its update files under the following terms and conditions. This warranty is valid in Japan only.

1. Scope of Warranty
   This warranty applies to the software produced by NoiseKen and its update files.

2. Free Support
   If a fault occurs in the system as a result of this software by NoiseKen, NoiseKen will provide support free of charge through software fixes and updates or other means only within the warranty period. However, please be aware that we may discuss when to implement corrective measures for minor issues.

3. Total Maximum Liability
   If the customer incurs losses or damages due to a fault of this NoiseKen software purchased by the customer, unless the losses or damages are the result of willful or negligent actions, the maximum amount of NoiseKen's liability for compensation for these losses or damages to the customer is equal to the amount that the customer paid for this NoiseKen software. But, NoiseKen assumes no liability for any losses or damages incurred by the customer due to faults arising from this software by NoiseKen, including but not limited to, direct or indirect potential lost earnings and direct or indirect damages due to third party claims for compensation against the customer.

4. Warranty Period
   The warranty period is the support period of the OS by the provider (including extended support periods) for the OS where operation is guaranteed by NoiseKen. When the support period of this OS ends, support for this software in this OS will also come to an end.
   Support for the target software will also end when manufacturing of this NoiseKen product is discontinued.

5. Exclusions
   These terms and conditions do not constitute a full and complete guarantee of operation or compatibility with the customer's system. Also, the following situations are outside the scope of support.
   [Combining with products other than those recommended by NoiseKen]
   Although every effort will be made to provide comprehensive software support, some faults may be unable to be resolved due to lack of compatibility or conflicts with PCs, peripherals, and other hardware, and OS and other software.
   [Added functions and OS upgrades]
   Please note that support for added functions and OS upgrades are outside the scope of free support.

9. NOISE LABORATORY SUPPORT NETWORK

- If a symptom which seems a trouble is found, check the symptom, software version, model name of connected device, and serial number, and inform this information to Noise Laboratory or your nearest sales agent of Noise Laboratory.

Note

NOISE LABORATORY CO., LTD.

1-4-4, Chiyoda, Chuo-ku, Sagamihara City, Kanagawa Pref., 252-0237, Japan

TEL: +81-(0)42-712-2051 FAX: +81-(0)42-712-2050

URL: http://www.noiseken.co.jp

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