



---

## Foreword

This user's manual contains useful information about the precautions, functions, and operating procedures of the X-Wirepuller program that is downloadable from <http://tmi.yokogawa.com/service-support/downloads>.

To ensure correct use, please read this manual thoroughly during operation.

After reading the manual, keep it in a convenient location for quick reference whenever a question arises during operation.

For information about the handling precautions, functions, and operating procedures of the DL series digital oscilloscopes, and the handling and operating procedures of Windows, see the manuals that accompany the particular instrument you are using.

## Notes

- The contents of this manual are subject to change without prior notice as a result of continuing improvements to the software's performance and functions. The figures given in this manual may differ from those that actually appear on your screen.
- Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. However, should you have any questions or find any errors, please contact your nearest YOKOGAWA dealer.
- Copying or reproducing all or any part of the contents of this manual without the permission of YOKOGAWA is strictly prohibited.

---

## Trademarks

- Microsoft, Internet Explorer, Windows, Windows 7, Windows 8, Windows 8.1, and Windows 10 are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Adobe, Acrobat, and PostScript are either registered trademarks or trademarks of Adobe Systems incorporated.
- In this manual, the ® and TM symbols do not accompany their respective registered trademark or trademark names.
- Other company and product names are trademarks or registered trademarks of their respective holders.

## Disclaimer

Downloading this software indicates your acceptance of the following disclaimer.

- YOKOGAWA bears no liability for any problems that may occur during download or installation of this software.
- YOKOGAWA assumes no responsibility for any damage that may occur directly or indirectly through the use of this software.
- This software is offered free of charge, but no unlimited warranties are made against any defects whatsoever. Also, YOKOGAWA may not be able to accept inquiries regarding repair of defects in or questions about this software.
- The property rights, proprietary rights, intellectual property rights, and all other rights associated with the software are held by YOKOGAWA.

## Revisions

- 1st Edition: September 2005
- 2nd Edition: January 2009
- 3rd Edition: April 2009
- 4th Edition: October 2009
- 5th Edition: July 2010
- 6th Edition: June 2011
- 7th Edition: November 2012
- 8th Edition: November 2018

---

# Contents

Foreword.....	i
1. Product Overview .....	1
2. Connection.....	5
Controlling the DL Series .....	5
Starting Software and Setup the Communication Interface.....	5
Creating / Breaking up Connection.....	7
3. Functions.....	8
Operation panel .....	8
Control Window Operation.....	11
4. Exiting the Application .....	14

---

# 1. Product Overview

## Functions

XWirepuller enables the DL9000 series including MSO models, SB5000 series, DLM2000 series, DLM3000 series, DLM4000 series, DL6000/DLM6000 series, DL850 series, and DL350 series to be controlled from your PC via the Ethernet, USB, or GP-IB interface.

When the software program starts, the front panel image of the connected the DL9000 series, SB5000 series, DLM2000 series, DLM3000 series, DLM4000 series, DL6000/DLM6000 series appears on the monitor of your PC. You can control these instruments from your PC with the mouse to simulate operations using the front panel keys of the instrument.

### **Saving Screen Images**

Saves the screen image data displayed on your PC in BMP or PNG format. The image of display section of control window is copied to the clipboard.

### **Selecting the Control Window Size**

You can select the size of the control window that is displayed on your PC from the choices below. When the display resolution of the PC is small, the control window can be displayed reduced in size.

- Larger: Displays the screen image of the DL using the same number of pixels as the number of pixels of the entire screen of the connected instrument.
- Standard: Displays the screen image of the DL using 75% of the number of pixels of the entire screen of the connected instrument.
- Smaller: Displays the screen image of the DL using 50% of the number of pixels of the entire screen of the connected instrument.
- Full screen: Displays the screen image of the DL with a full-screen mode.

### **Selecting the Display Update Rate**

You can select the display update rate of the DL screen image from the following.

However, the actual display update rate may be slower than the specified update rate depending on the network transmission system or the amount of communication load.

100 ms to 10 s

### **Updating the Screen**

The screen image of the DL can be forcibly updated. This is done when the display update rate is set to a low value or when the display update is paused.

### **Pausing Display Update Operation**

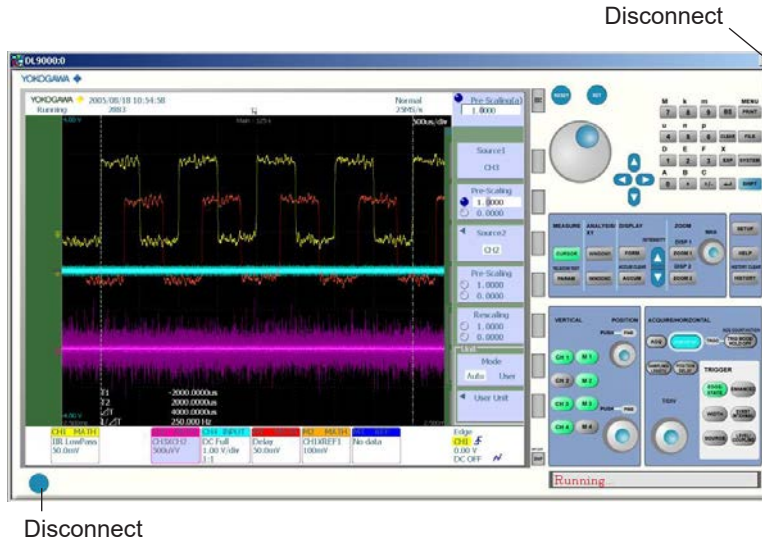
Pauses the display update operation.

Pausing the display update operation improves the response of the software program such as when turning ON/OFF numerous items at once or when entering values from a keyboard.

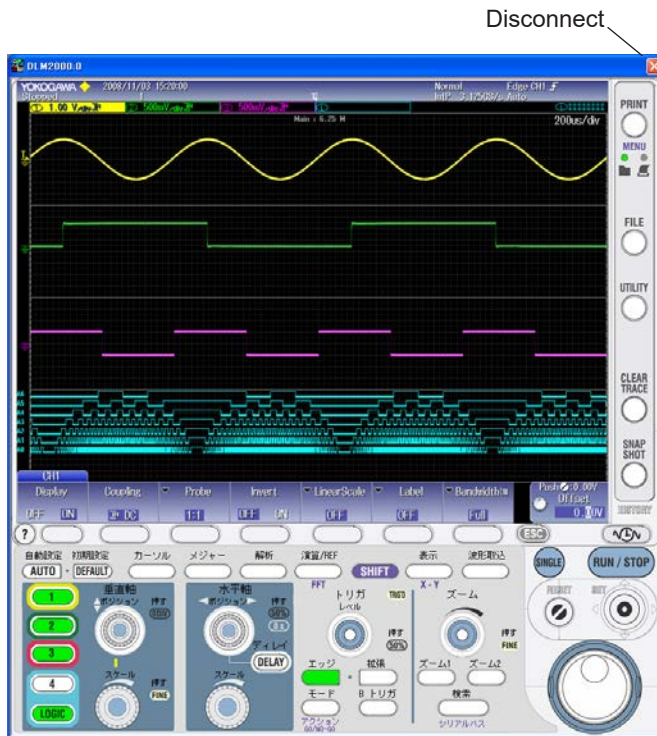
## Control Screen

The control screen differs depending on the connected DL. Here, the control screens of the DL9000 series, DL5000 series, and DLM 2000 series are shown as examples.

### For DL9000 series/SB5000 series Digital Oscilloscopes



### For DLM2000 Series Digital Oscilloscopes



## PC System Requirements

### Operating System

Microsoft Windows 7, Windows 8, Windows 8.1, or Windows 10

### PC Hardware

CPU: Core 2 Duo, 2 GHz or better

Memory: 1 GB or more (2GB recommended)

Space available on HDD: Free space equaling 2 GB + the size of files to be loaded

### Peripherals

Display: XGA or higher (Colors: 65536 or more)

Drive: CD-ROM drive, mouse, and printer

Communication interface: GP-IB1/USB<sup>1</sup>/Ethernet

GP-IB Board or PCMCIA Card GP-IB board made by National Instruments Corporation or PCMCIA card<sup>2</sup>

1: To use the USB interface, a dedicated USB driver is required.

2: The operation of the PCMCIA-GPIB card is not guaranteed on Windows 7 or Windows 8.

### Interface supported by Models

Models	GP-IB	USB	Ethernet
DL9040/DL9140/DL9240 series (firmware version 1.64 or later)	✓	✓	✓
DL9500/DL9700 series (firmware version 3.20 or later)	✓	✓	✓
SB5000 series (firmware version 4.00 or later)	✓	✓	✓
DLM2000 series (firmware version 1.08 or later)	✓	✓	✓ <sup>1</sup>
DLM3000 series	✓	✓	✓ <sup>1</sup>
DLM4000 series	✓	✓	✓ <sup>1</sup>
DL6000/DLM6000 series	✓	✓	✓ <sup>1</sup>
DL850 series	✓	✓	✓ <sup>1</sup>
DL350 series	-	✓	✓ <sup>1</sup>

1: Connected with VXI-11

## Notes on Using the Software

### Precautions Concerning the Use of the Software

- Do not perform operations directly on the DL series digital oscilloscopes while using this software program. Doing so can lead to erroneous operation.
- If the standby mode provided on your PC is activated, the operation of the software may not be able to continue.  
When using the software, turn OFF the standby mode.
- If you run the software using a NIC interface, the line load is 4 Mbytes/s maximum. Consult your network administrator on using the NIC interface.
- If a connection error occurs when connecting to a DL digital oscilloscope, power cycle the DL.
- Do not set the network or communication parameters of the DL series using this software program. The connection may be disconnected.
- Do not execute self-tests using this software program.
- Simultaneous connections from multiple PCs to a single DL series digital oscilloscope are not allowed.



## 2. Connection

### Controlling the DL Series

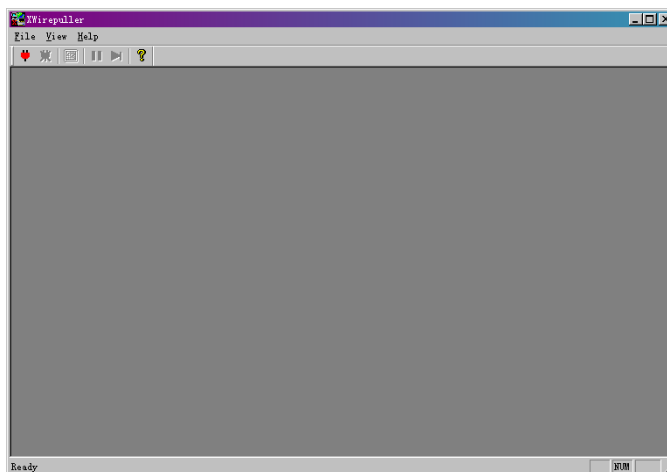
#### Setting the Communication Interface

Set the DL according to the communication interface to be used.

For the setting method, please refer to the instruction manual of the DL.

### Starting Software and Setup the Communication Interface


Click the file "XWirepuller.exe" to display the following window.

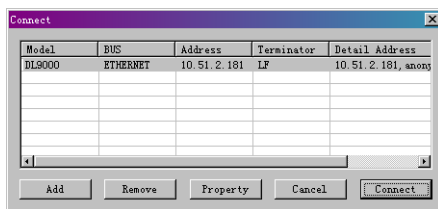


#### Note

Before creating communication with the DL, make sure that the cable between PC and DL has been correctly wired. For the hardware connection between PC and DL, please refer to the communication operation guide of your specific instrument.

### Create Connection to the DL Instrument

Click **File > Connect** menu or  icon, the connect dialog will then open. The predefined connection configurations are listed in it as follows.



## Add New Connection Configuration

The connection configuration list is empty at first start. To add new connection configuration to the DL, click the Add button. A new device configuration dialog will then open in which users can select the variable communication port and setup the corresponding parameters.

Set the communication interface to be used from the menu of the DL.

For DL9000 series and SB5000 series.

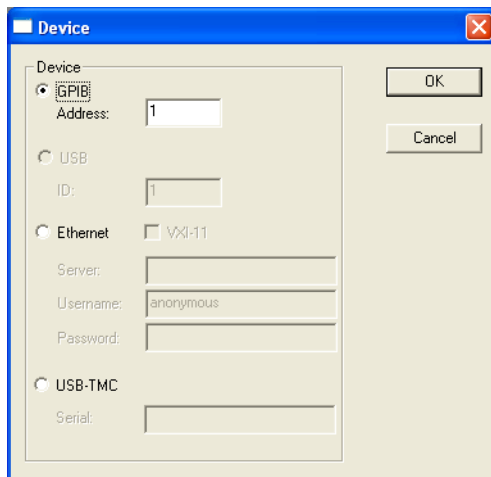
SYSTEM > Remote Control > Device

For DLM2000 series, DLM3000 series, DLM4000 series, and DL6000/DLM6000series.

UTILITY > Remote Control > Device

For DL850 series and DL350 series

UTILITY > Remote Ctrl > Device



### GPIB

Address: The unique ID of a GPIB device, ranges from 0~30

### Ethernet

VXI-11: The protocol of the instrument via Ethernet

Server: The IP address or host name of the instrument

Username: The login username for the Remote Control assigned by the instrument (except VIX-11)

Password: The password for the username (except VXI-11)

### USB-TMC

Serial: The serial No. of the instrument

Click the **OK** button to add new connection configuration into the configuration list. The program will try to check the correctness of the configuration, if succeeded, it will display the instrument model name, and otherwise it will return an error message and display “unknown” as model name.

## Remove Connection Configuration

Click the **Remove** button to remove a selected connection configuration from the configuration list.

## Change Connection Configuration's Parameters


Click the **Property** button to change a selected connection configuration's parameters, a configuration property setting dialog will then open which looks same as the new instrument dialog. Change the connection configuration's parameters and click the **OK** button to save changes.

## Creating / Breaking up Connection

### Create Connection to the DL Instrument

Select a defined connection configuration in the configuration list and click the Connect button to connect to the DL. (Double click on defined configuration in the list, also can create connection.) The program then will try to initialize the communication to the DL with selected configuration. If succeeded, the control window for the instrument will be displayed else, an error message will be displayed.

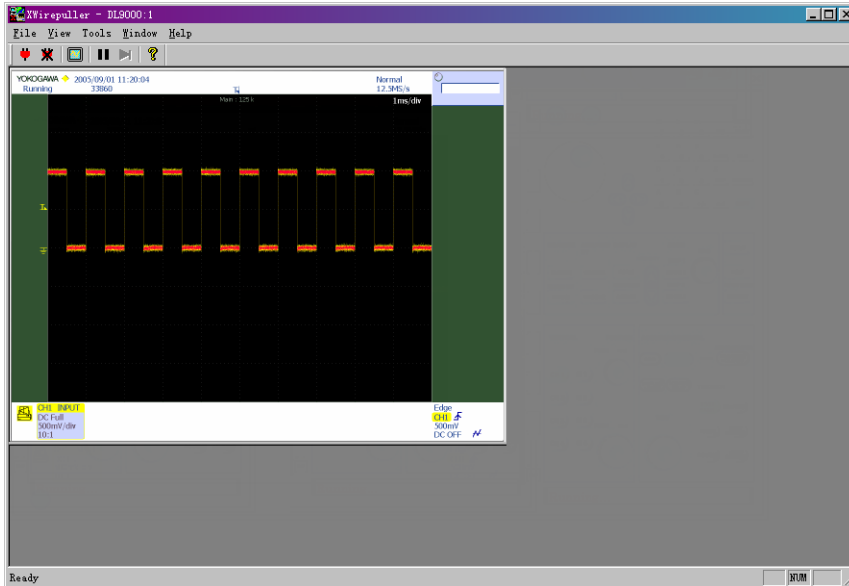
### Break up Connection

Click **File > Disconnect** menu or  icon to break up current connection to the DL .

## 3. Functions

### Operation panel

Click **View > Panel** menu to display or hide the operation panel.



#### Note

In the following cases, the control screen display cannot be updated:

- While editing waveform, square, or polygon zones
- During processing of cycle statistics
- During statistical processing of history data

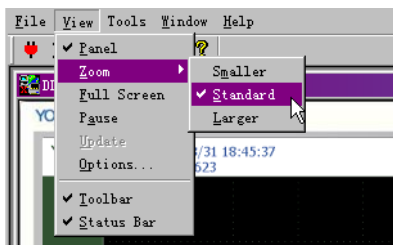
### Control Window Size

Click **View > Zoom** menu to set the control window size.

**Larger:** Displays the screen image of the DL using the same number of pixels as the number of pixels of the entire screen of the connected instrument.

**Standard:** Displays the screen image of the DL using 75% of the number of pixels of the entire screen of the connected instrument.

**Smaller:** Displays the screen image of the DL using 50% of the number of pixels of the entire screen of the connected instrument.



## Full screen display

Click **View > Full Screen** menu or  icon to display with a full-screen mode.

The full-screen mode ends if the “ESC” key of the personal computer is pushed, and it returns to a usual display.

The full-screen mode or display of the operation panel can be ended by pushing mouse's right button while pushing the “CTRL” key to the personal computer.

## Updating the Screen

Click **View > Update** menu or  icon to update the screen image.

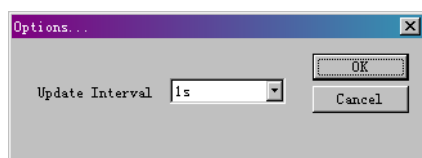
## Pausing Display Update Operation

Click **View > Pause** menu or  icon to pause the display update operation.

## Display update Interval

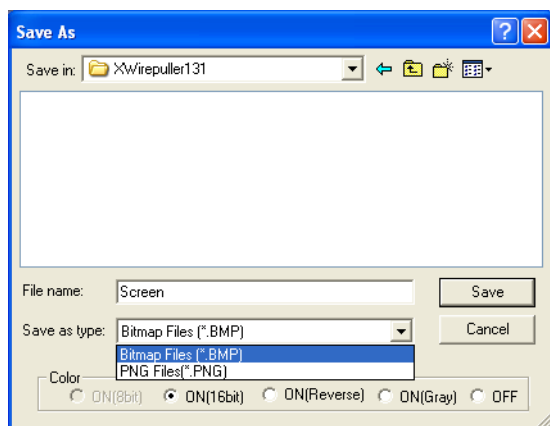
Click **View > Options** menu, the option dialog will open as follows.

The setting ranges of the interval are from 100 ms to 10 s.



## Saving Screen Images

Click **Tools > Image** menu to save the screen image data displayed on your PC in BMP or PNG format.



### Note

ON(8bit) is not selectable with the DLM2000/DLM3000/DLM4000/DL850/DL350 series.

## Copying the Image to the Clipboard

Click **Tools > Copy Image to Clipboard** or **Copy Image to Clipboard(Reverse)**.

### Copy Image to Clipboard

The image of display section of control window is copied to the clipboard.

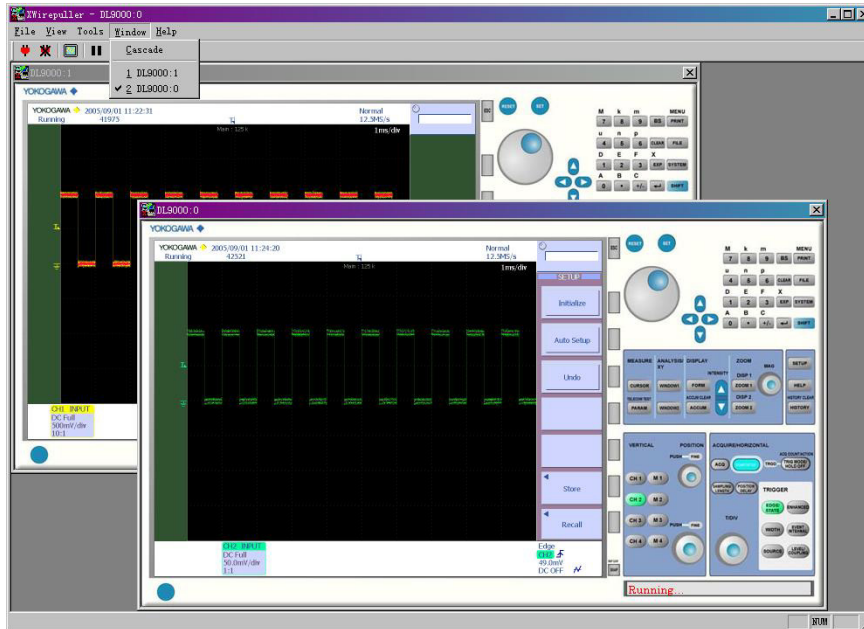
### Copy Image to Clipboard(Reverse)

The image of display section of control window is copied to the clipboard without the background color.

## Two or more DL

Click **Window > Cascade** menu, all open windows are cascaded.

Moreover, the list of connected DL is displayed in the menu, and the window can be displayed on the foremost side by clicking it.



### Note

When two or more DL are controlled, the connection might be cut by the situation connected DL and line.  
Please use it by the number that can be connected with stab.

## Viewing version information










Click the **Help** menu, the version of XWirepuller you are currently using is displayed.

## Control Window Operation

### Using the Mouse

The displayed icon and the mouse operation vary depending on where the mouse pointer is located on the control window. The following table shows the mouse operation for each icon and the operation of the DL series digital oscilloscopes.

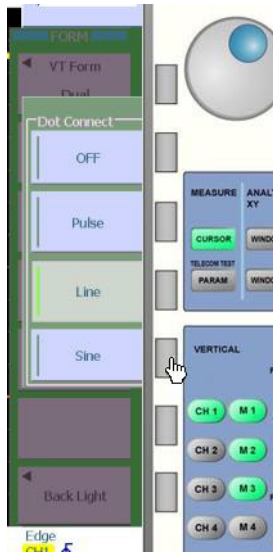
#### For DL9000 series/SB5000 series

Mouse Pointer Position	Displayed Icon and Mouse Operation	Operation
Operation key	 Click operation	Same as pressing the operation key
Screen	 Click operation Wheel operation	Same as the mouse operation of the DL series Same as the mouse operation of the DL series
Area to the left or right of the jog shuttle	 Click operation Wheel operation	Same as turning the jog shuttle to the left or right Same as turning the jog shuttle
Area to the left, right or center of the VERTICAL SCALE knob	 Click operation Wheel operation   Click operation	Same as turning the SCALE knob to the left or right Same as turning the SCALE knob  Same as pressing the SCALE knob
Area to the left, right or center of the VERTICAL POSITION knob	 Click operation Wheel operation   Click operation	Same as turning the POSITION knob to the left or right Same as turning the POSITION knob  Same as pressing the POSITION knob
Area to the left or right of the T/DIV knob	 Click operation Wheel operation	Same as turning the T/DIV knob to the left or right Same as turning the T/DIV knob
Area to the left or right of the MAG knob	 Click operation Wheel operation	Same as turning the MAG knob to the left or right Same as turning the MAG knob

### Example of Mouse Operation

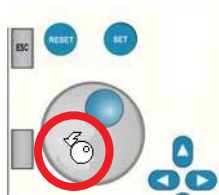
1. Operation Key Operation

Click to select Sine.



2. Jog Shuttle Operation

Click or operate the wheel to set.



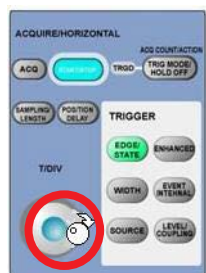
3. VERTICAL POSITION Knob Operation

Push the knob to change FINE mode.











4. T/DIV Knob Operation

Turn the wheel to change the T/div setting.





**For DLM2000 series, DLM3000 series, DLM4000 series, DL6000/DLM6000 series, DL850 series, DL350 series**

Mouse Pointer Position	Displayed Icon and Mouse Operation	Operation
Operation key	 Click operation	Same as pressing the operation key Screen
Screen	 Click operation	Same as the mouse operation of the DL series
Around the left or right side of the jog shuttle	 Click operation  Wheel operation	The setting can be changed at a setting resolution of 1, 10, or 20 times depending on the location of the mouse pointer. Hold down the mouse button to change the setting repeatedly.  Same as turning the jog shuttle
Center of POSITION, SCALE, TRIGGER LEVEL, or ZOOM knob	 Click operation	Same as pushing the corresponding knob.
Around the left, right, or bottom of POSITION or TRIGGER LEVEL knob	 Click operation  Wheel operation	Same as turning the corresponding knob to the left or right. The setting can be changed at a setting resolution of 1 or 10 times depending on the location of the mouse pointer. If you click in the bottom area where the number 123 appears, an input box is displayed for direct input of a setting value. Hold down the mouse button to change the setting repeatedly.
Around the left or right of SCALE, TIME/DIV, or ZOOM knob	 Click operation	Same as turning the corresponding knob to the left or right. The setting can be changed at a setting resolution of 1 time. Same as turning the corresponding knob.
	Wheel operation	
Center of the SET key	 Click operation	Same as pressing the SET key.
Around the left, right, top, or bottom of the SET key	 Click operation	Same as pushing the SET key in the direction of the arrow.

---

## 4. Exiting the Application

### Exiting the Application

Click **File > Exit** menu or  icon to exit the application.