KIKUSUI Part No. Z1-006-530, IB030031
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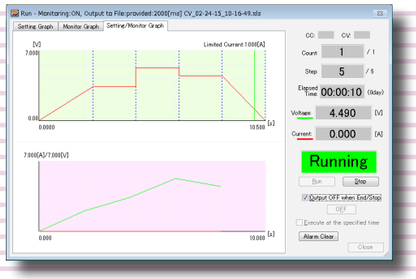
Sequence Creation Software Setup Guide

SD024-PAV Wavy for PAV

Ver 6.x



Thank you for purchasing the Sequence Creation Software SD024-PAV Wavy for PAV.

SD024-PAV Wavy for PAV is a software application that enables you to create and execute the sequences on Kikusui PAV Series regulated DC power supplies via the connected PC.

- You can create and edit sequences easily by using a mouse.
- During sequence execution, the software indicates the point being executed.
- You can monitor the voltage and current, and save the monitored data to a file.
- The software displays the monitored data as a real-time monitor graph.

Package contents

The Wavy for PAV package contains the following items.

- Program CD-ROM
- SD024-PAV Wavy for PAV Setup Guide (this guide)

Applicable version

This guide applies to version 6.x of SD024-PAV Wavy for PAV. To find out the version of the Wavy for PAV, click on the Help menu and select About Wavy.

Related equipment versions

Wavy for PAV applies to PAV series with the following firmware versions.

- Ver. 2.2x and later

To Check the firmware version, see the PAV series manual.

Related manuals

For details about the PAV series regulated DC power supply, see the PAV series manual.

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SAFETY PRECAUTIONS

Before using Wavy, carefully read the operation guide of regulated DC power supply. Be sure to connect and handle the device properly. Improper connections or handling may lead to serious accidents, injury, and fire.

SYSTEM REQUIREMENTS

- Core2 or higher
- Windows 10, Windows 8.1, or Windows 7
- 2 GB RAM (Minimum)
- 10 GB or more of free hard-disk space
- A display that supports 1024 x 768 or higher resolution (96 DPI)
- CD-ROM drive
- Mouse
- RS232C, USB, or LAN (depending on the interface to use)

If you intend to perform the sequence for a long duration of time, be sure to install sufficient RAM for better performance. It is recommended to install RAM larger than 4 GB.

To use a USB interface, ensure that a VISA library is installed on your PC.

INSTALLATION

An administrator account is required for the following installation.

Installing the VISA library

To use the PAV series, VISA library needs to be installed on your PC.

VISA (Virtual Instrument Software Architecture) library is a standard specification for measurement instrument connection software, which was developed by VXIplug&play Sytems Alliance. One of the following VISA libraries is required.

- NI-VISA by National Instruments (Ver.4.0 or later)
- Keysight VISA by Keysight Technologies (formerly Agilent Technologies) (Keysight IO Libraries Suite14.2 or later)
- KI-VISA Ver 5.1.2 or later

KI-VISA is an original VISA library developed by Kikusui Electronics Corporation, which supports IVI VISA 5.0 specification. You can download the latest version of this library through our website (http://www.kikusui.co.jp/download/).

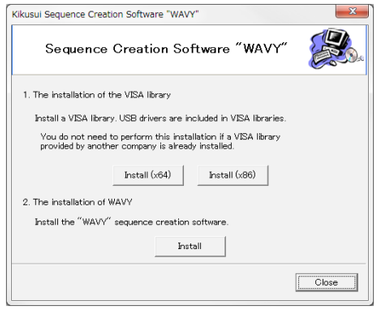
If NI-VISA or Keysight VISA is already installed on your PC, you do not need to install KI-VISA.

1 Insert the CD-ROM to your CD-ROM drive.

A setup window appears. Otherwise, double-click "AutoRun.exe" included in the CD-ROM.

2 Click Install under 1. The installation of the VISA library for using the USB or LAN.

Click Install (x64) for 64-bit OS or Install (x86) for 32-bit OS.



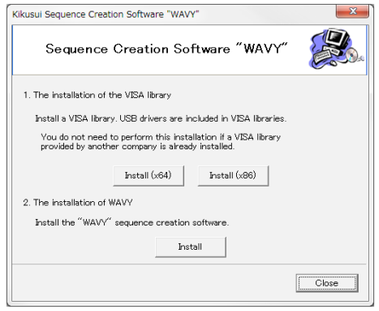
The VISA library installation initiates. In case that a VISA library has already been installed, the VISA library and its version are displayed.Do not install multiple VISA libraries on a single PC.

Installing Wavy

1 Insert the CD-ROM to your CD-ROM drive.

A setup window appears. Otherwise, double-click "AutoRun.exe" included in the CD-ROM.

2 Click Install under 2. The Installation of WAVY.



3 Follow the instructions until the installation is complete.

4 Click Close.

Uninstalling Wavy

From Control Panel, open Programs and then Programs and Features, and uninstall Kikusui SD024-PAV Wavy for PAV.

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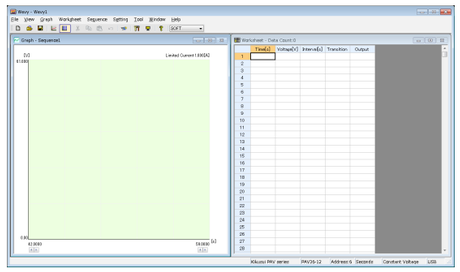
STARTING WAVY

Before starting Wavy, make sure that the power-saving mode and the screen saver are truned off and all the other applications are closed on your PC.

When your PC supports either Advanced Power Management (APM) or sleep mode, turn off these functions.

Changing the DPI setting may result in improper appearance of the display.

- **To start Wavy,click on the Start menu and select All Programs. Then, select Kikusui, SD024-PAV, and Wavy for PAV in this order.**



VIEWING THE OPERATION GUIDES

The operation guides contain information on how to use Wavy and description of interface settings.

Manual is available in two versions: HTML help and PDF

Adobe Reader 10 or later is required to view the operation guide in PDF format.

- **To open the HTML help, click Help and then Help (English).**
- **To open the PDF version of the operation guide, click All Programs, Kikusui, SD024-PAV, and then Operation Manual (English).**

CONNECTING PC TO PAV SERIES

The PAV series can be used with USB, RS232C, or LAN (factory option) interface.

Note that the cables are not included in the product package.

Interface	Description
USB	To connect PC to PAV series via a USB, use a standard USB cable. USB driver for PAV series needs to be installed on your PC. The driver is included in the CD-ROM.
RS232C	The RS232C port on PAV is a RJ-45 8-pin connector.
LAN	To connect PC to PAV series via a network hub or router, use a LAN cable (straight or crossover). You can also connect PAV to PC directly.

For details on connecting, see the PAV series Communication Interface Manual and LAN Interface Manual.

CONFIGURING THE INTERFACE

Before using Wavy, configure the interface.

You need to configure the PAV series side as well as the Wavy side according to the interface you will use.

For details on interface settings, see the operation guides.

FEATURE INTRODUCTION

Sequence execution

A sequence is a feature that automatically executes the predefined steps in a given order. You can simulate various waveforms.

You can select from three sequence modes.

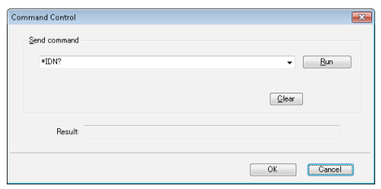
Sequence mode	Description
SOFT	Wavy sends step conditions one step at a time to the PAV series to execute a sequence. All available sequence functions of Wavy can be used.
HARD(LIST) HARD(WAVE)	Wavy uses the hardware sequence function (LIST and WAVE) that the PAV series has. Wavy sends the conditions of all steps to the PAV series first, and then the PAV series sequence begins. Compared to software control, the step transition resolution is smaller, but some limitations apply to the number of steps, sequence time settings, and the like.

Remote control panel

You can use Wavy to set the PAV series' voltage and current, turn the output on and off, and monitor values.

Cammand control

You can send PAV series commands from Wavy.



SPECIFICATIONS

	Sequence mode					
	SOFT			HARD(LIST)/HARD(WAVE)		
Operating Mode	Constant Voltage (CV), Constant Current (CC)			←		
Number of Significant Decimal Places*1	Voltage: 3 digits, Current: 4 digits			←		
Monitoring	Output current value, output voltage value			←		
Monitoring Interval*2	200 ms to 600 000 ms (0.2 s to 600 s)			←		
Total Number of Steps	1 024			12		
Range of Sequence (Interval)*2	Unit	Range	Setting resolution	Unit	Range	Setting resolution
	s (seconds)	0.5 s to 999.5 s	0.5 s	s (seconds)	0 s to 65 s	0.001 s
	min (minutes)	0.1 min to 999.9 min	0.1 min			
	h (hours)	0.1 h to 999.9 h	0.1 h			

*1 The actual number of significant decimal places varies depending on the PAV Series to which the PC is connected.

*2 The accuracy depends on your PC environment.