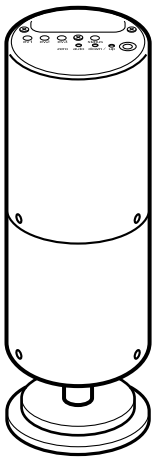
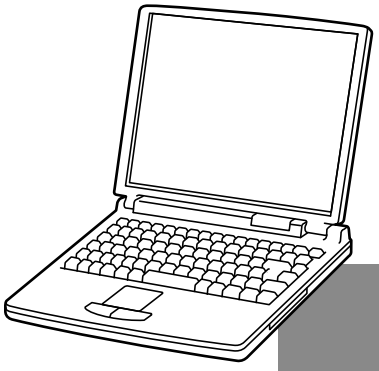
azbil

No. CP-UM-5499E

User's Manual for Smart Loader Package Model SLP-SP5 for Sapphire Capacitance Diaphragm Gauge

Model SPG _ _





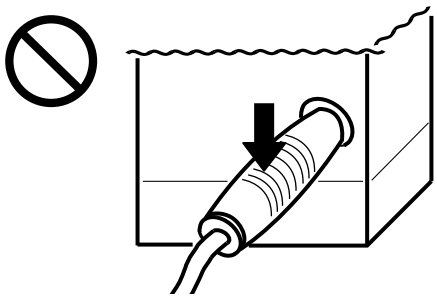
Thank you for purchasing this Azbil Corporation product. This manual contains information for ensuring the correct use of the smart loader package.

Those designing, configuring, or maintaining equipment that uses this product should first read and understand this manual. It provides necessary information not only for initial setup, but also for changing of settings, troubleshooting, etc. Be sure to keep the manual nearby for handy reference.

Azbil Corporation

IMPORTANT

Do not apply too much force when connecting the loader plug. Doing so might damage the instrument.



[!] Handling Precautions

Application of excessive force to the loader plug might cause communications failure. If this happens, reconnect the loader plug correctly.

NOTICE

Be sure that the user receives this manual before the product is used.

Copying or duplicating this user's manual in part or in whole is forbidden. The information and specifications in this manual are subject to change without notice.

Considerable effort has been made to ensure that this manual is free from inaccuracies and omissions. If you should find an error or omission, please contact the azbil Group.

In no event is Azbil Corporation liable to anyone for any indirect, special or consequential damages as a result of using this product.

Conventions Used in This Manual

■ In describing the product, this manual uses the icons and conventions listed below.

[!] Handling Precautions:
Handling Precautions indicate items that the user should pay attention to when handling this device.

Note: Notes indicate information that might benefit the user.

☞ This indicates the item or page that the user is requested to refer to.

(1), (2), (3): Numbers within parentheses indicate steps in a sequence or parts of an explanation.

[OK] button: Indicates a selection button in screens displayed on the personal computer.

[Option] : Indicates messages and menus displayed on the personal computer.

[Option] → [Type Setting] : Indicates the order to select the [Option] first and then select the [Type Setting] displayed on the personal computer.

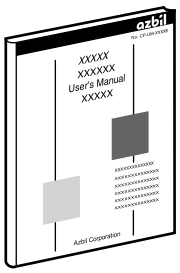
>>: Indicates the result of an operation, details displayed on the personal computer or devices, or the state of a device after an operation.

[Ctrl] key, [A] key: Indicates keys on the keyboard.

[Ctrl]+[A] key: Indicates the operation of pressing the [A] key with the [Ctrl] key on the keyboard held down.

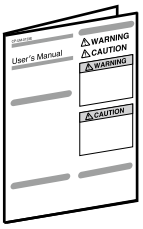
The Role of This Manual

There are three different manuals related to model SPG_ _. Read them as necessary for your specific requirements. If a manual you require is not available, contact the azbil Group or its dealer.



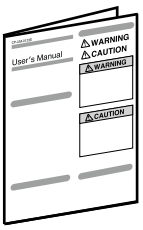
User's Manual for Smart Loader Package Model SLP-SP5 for Sapphire Capacitance Diaphragm Gauge Model SPG _ _
Manual Document No. CP-UM-5499E

This manual.
This manual is supplied with the Smart Loader Package model SLP-SP5.
The manual describes the software used to make various settings for Model SPG _ _ using a personal computer. Personnel in charge of design or setting of a system using Model SPG _ _ must thoroughly read this manual. The manual describes installation of the software into a personal computer, operation of the personal computer, various functions, and setup procedures.



Sapphire Capacitance Diaphragm Gauge Model SPG _ _ User's Manual
Manual Document No. CP-SP-1400E

Personnel in charge of design and/or manufacture of a system using this unit must thoroughly read this manual. This manual describes the safety precautions, installation, wiring and primary specifications.



USB Loader Cable (model 81441177-001) Device Driver Installation
Manual Document No. CP-SP-1477JEC

Those responsible for setting up the loader should be sure to read this manual. A dedicated device driver is required for a PC to recognize the USB loader cable. This document describes how to install the device driver on a PC and precautions.

Organization of This User's Manual

This manual is organized as follows.

Chapter 1. INTRODUCTION

Be sure to read this chapter before you start using the Smart Loader Package. This chapter describes the required operating environment for the personal computer, tells how to install the package, and briefly introduces its features.

Chapter 2. STARTING AND QUITTING THE LOADER

This chapter describes how to start and quit the loader.

Chapter 3. HOW TO USE THE LOADER

This chapter describes setting of functions, screen configuration, and setting methods.

Chapter 4. TROUBLESHOOTING

This chapter describes error messages that are displayed when a problem occurs, and tells how to remedy the problem.

Contents

Chapter 1. INTRODUCTION

1 - 1 Overview

The SLP-SP5 (simply called “the SLP” from here on) is a software engineering tool for the SPG Sapphire capacitance diaphragm gauge (simply called “the SPG” from here on).
The SLP is a software package that runs on Windows 10(64-bit) (collectively called “Windows”).

■ Loader functions

The SLP has the following functions.

● Offline function
The settings for the SPG can be configured in offline mode (when the loader cable is not connected to the SPG), and then the data can be written to the SPG later in one batch.
The settings can also be written to a different SPG with the same model No.

[!] Handling Precautions

- Once the data is read from the SPG via the loader cable, it can be edited. If the data is not read, it is not displayed on the screen and cannot be edited.

● Online function
You can monitor, operate, and adjust the SPG, and change its settings in online mode in real time (when the loader cable is connected to the SPG).

1 - 2 System Requirements

The following operating environment is required for using the SLP-SP5.

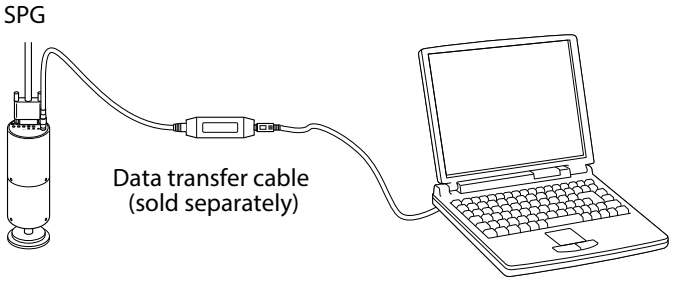
■ System environment

Item	Description	
PC	Operating system	Windows 10 (64-bit version)
	CPU	Intel® Core™ i series
	Memory	2 GB or more
	Solid-state drive (SSD) or hard disk drive (HDD)	At least 100 MB of free space for this software.
	Display	1366 × 768 resolution or higher, 32-bit color is recommended
	Input devices	Keyboard, a pointing device such as mouse
	USB port	1 or more (USB2.0 Full Speed / Type-A)
Software	Device driver for USB loader cable	The device driver for Azbil's USB loader cable. It must be installed on a PC to use the cable. *1 Download it from our website. There are multiple device drivers available. Choose one that supports USB loader cable rev.05/06/07 and is compatible with Windows 10 and 11.
	Adobe® Acrobat® Reader	It must be installed on the PC to view the user's manual in PDF format. Download it from the Adobe® website.
Hardware other than the PC	USB loader cable Model 81447711-001 (rev.05/06/07)*2	A communication cable manufactured by Azbil. It is required to connect a PC to the device (sold separately).

*1. For details on the device driver, refer to *USB Loader Cable (model 81441177-001) Device Driver Installation Manual* (document No. CP-SP-1477JEC).

*2. The revision number is printed on the USB loader cable.

■ Hardware configuration

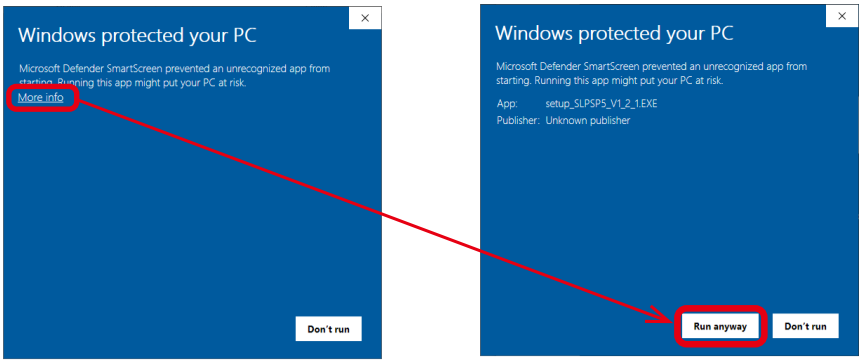


1 - 3 Installing the Loader

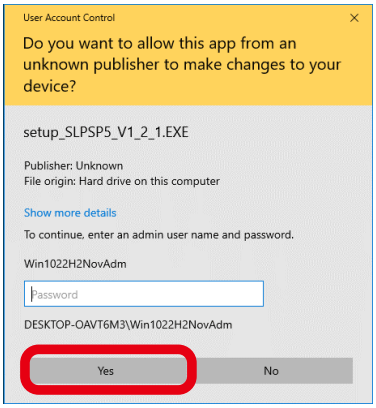
This section describes how to install the loader and related software.
Please download the following files from Azbil's website (https://www.azbil.com/).
· Installer for the SLP-SP5 loader
· Installer for the USB loader cable device driver
(A version of the device driver that supports USB loader cable rev.05/06/07 and is compatible with Windows 10 and 11)

Handling Precautions

- While other applications are running, the installer may not work properly. Close other applications before launching the installer. The installer may not work properly due to a particular combination of other applications and drivers.
- For details on Windows and PC settings, see the user's manuals provided with Windows and with the PC.
- When the installer starts, the warning screen shown below may be displayed. Clicking [More info] brings up the [Run anyway] button. Click it.



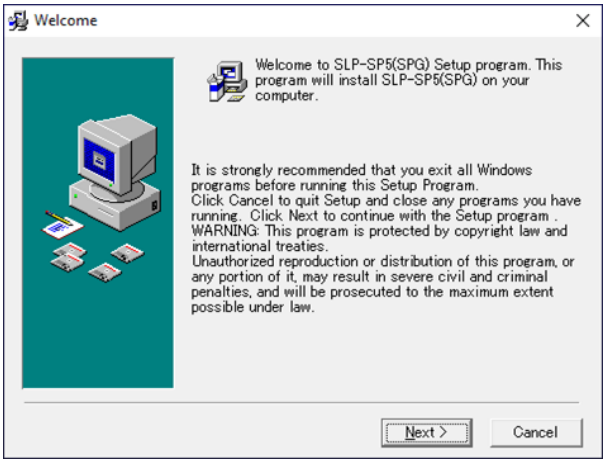
- If the [User Account Control] window is displayed during installation, enter the admin user password and click [Yes].



Screens from Windows 10 are used in the following explanation.

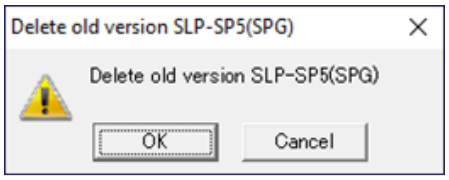
■ Installing the loader

(1) Start the installer for the SLP-SP5 (setup_SLPSP5_V□_□_□.exe).
>> The following window is displayed.

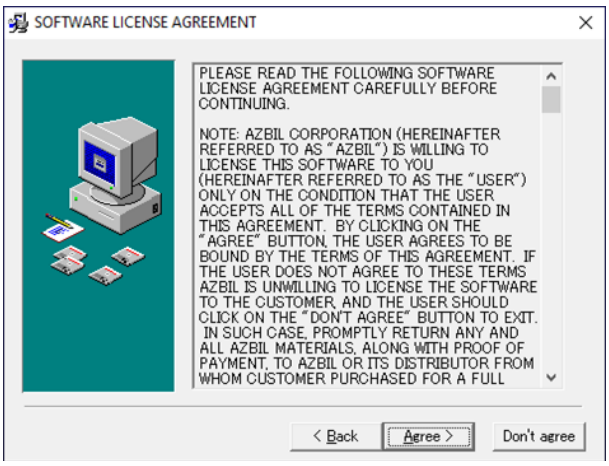


* □ represents a number.
Example: setup_SLPSP5_V1_2_1.exe

If an older version of SLP-SP5 has been installed on your PC, The following window is displayed. Click the [OK] button to delete the old version of SLP-SP5.

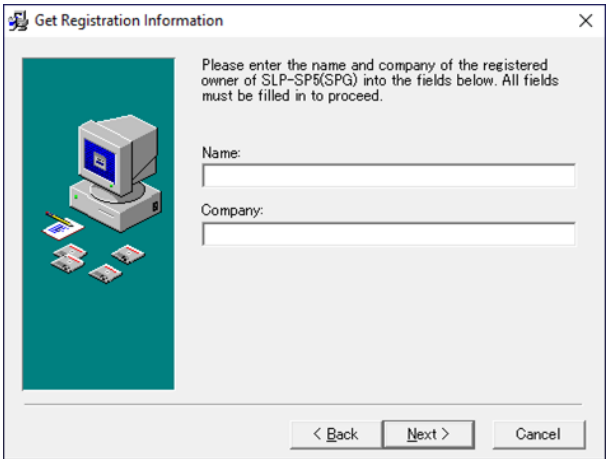


(2) Click the [Next >] button.
>> The following window is displayed.



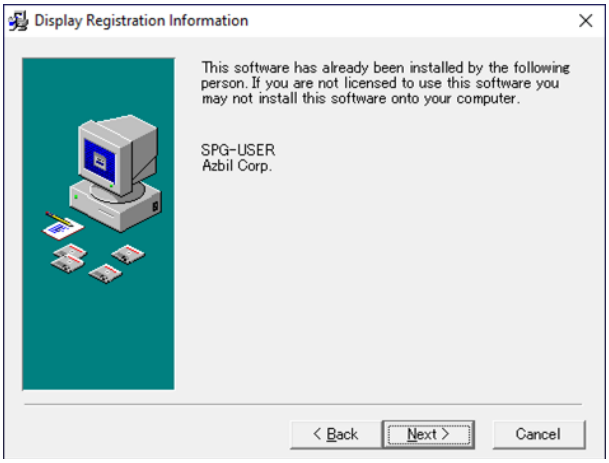
(3) If you agree to the software license agreement and wish to install the program, click the [Agree >] button.
To abort the installation, click the [Don't agree] button.

>> After clicking the [Agree >] button, the following window is displayed.



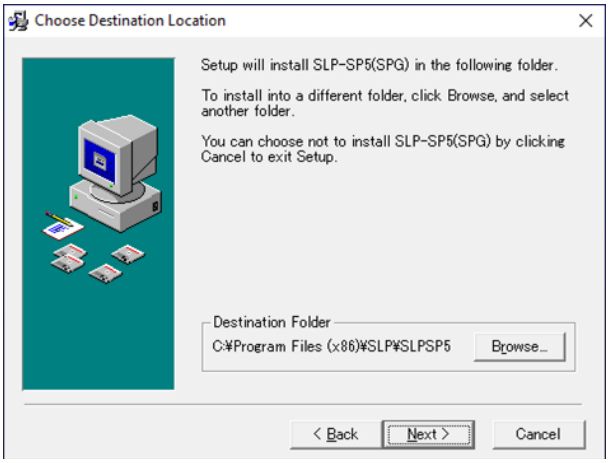
(4) Enter a registered user name and company name, and then click the [Next >] button.

>> The following window is displayed.



(5) Click the [Next >] button.

>> The following window is displayed.

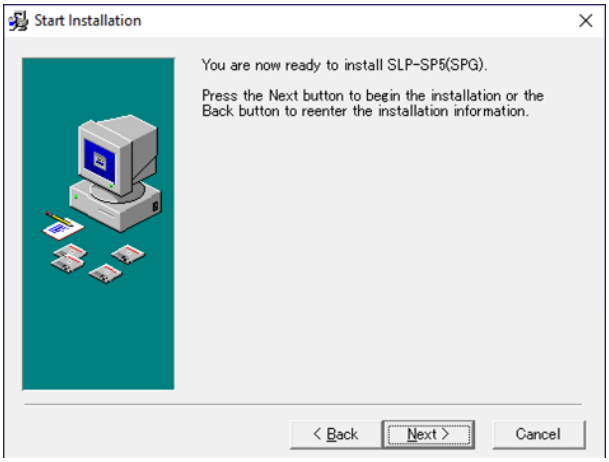


Note

- To change the installation destination folder, click the [Browse...] button.

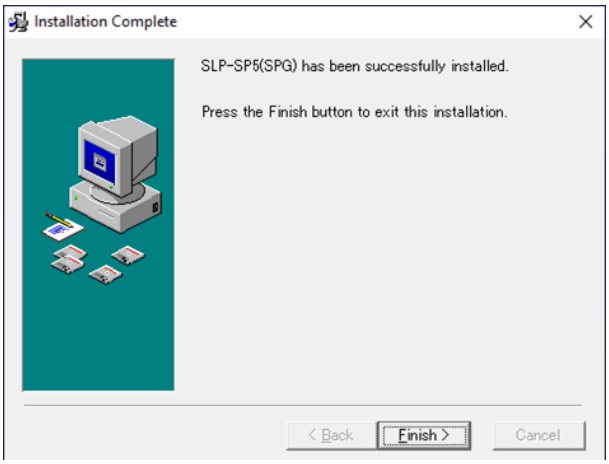
(6) Click the [Next >] button.

>> The following window is displayed.



(7) Click the [Next >] button.

>> The following window is displayed.



(8) Click the [Finish >] button.

>>When the installation is completed successfully, the screen returns to the Windows screen.

■ Installing the USB Loader Cable Device Driver

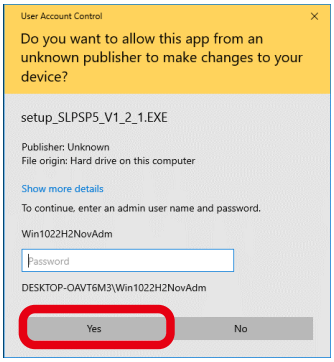
A device driver must be installed before using the USB loader cable.
Follow the procedure below to install the device driver.

● Installing the device driver

Handling Precautions

- Before installing the device driver, unplug the USB loader cable from the PC.
- If you have used a USB loader cable on the PC, an older version of the device driver may have been installed. In this case, uninstall the old device driver first.

(1) Right-click the device driver installer (drvsetup2023.exe) and select [Run as administrator].
>> The [User Account Control] window is displayed.



(2) Enter the admin user password and click [Yes].
>> The device driver installation window is displayed.

(3) Follow the instructions to install the device driver.

Note

- ☞ The installation details are described in *USB Loader Cable (model 81441177-001) Device Driver Installation Manual* (document No. CP-SP-1477JEC).
  Be sure to read it. The manual can be downloaded from our website (https://www.azbil.com/).

- **Uninstalling the device driver**

Handling Precautions

- Before installing the device driver, unplug the USB loader cable from the PC.

(1) Right-click the [Start] button at the bottom of the desktop screen and select [Apps & features].
>> A list of installed apps are displayed.

(2) Uninstall the listed "Azbil Loader Cable Driver".
>> A list of installed apps are displayed.

Note

- ☞ The installation details are described in *USB Loader Cable (model 81441177-001) Device Driver Installation Manual* (document No. CP-SP-1477JEC).
  Be sure to read it. The manual can be downloaded from our website (https://www.azbil.com/).

Chapter 2. STARTING AND QUITTING THE LOADER

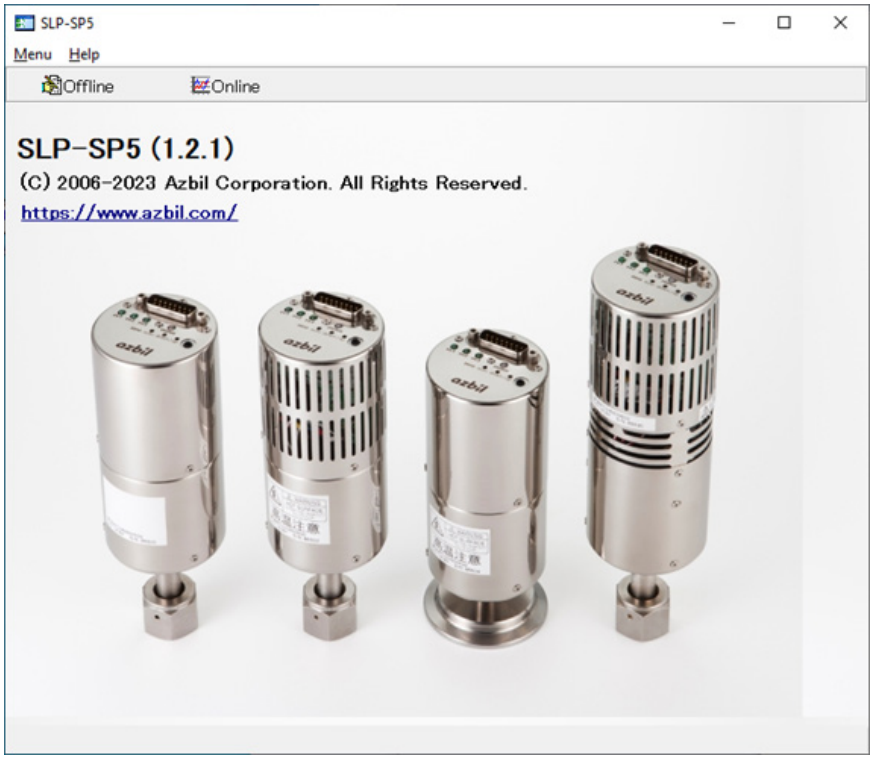
Handling Precautions

- Before starting up the loader, close all other application software. If other applications are running, the loader may not function properly.
- Open Windows [Control Panel], select [Clock and Region] → [Region], and then press the [Additional Settings] button to display the [Customize Format] window. Check that "." (a period) is set for [Decimal symbol]. If any other symbol is set, the loader will not operate properly.
- Do not unplug the loader cable from the PC while the loader is running. The loader may not operate properly.
- Open Windows [Power & sleep] and set the PC so that it will not enter sleep mode. If the PC enters sleep mode, communication with the device will stop.
- For details on Windows and PC settings, see the user's manuals provided with Windows and with the PC.

■ Starting the loader

Double-click the [SLP-SP5 (SPG)] icon on the desktop. Or, click the [Start] button at the bottom of the screen to show the Start menu, and then select [SLP] → [SLP-SP5 (SPG)].

>>The SLP starts and the menu window is displayed.



Note

- For operating system details and mouse setup, refer to the user's manuals provided with Windows.

■ Quitting the loader

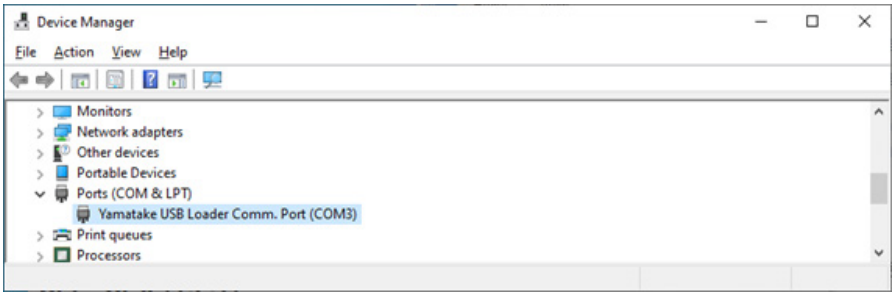
Click the icon at the upper right corner of the screen.

Selecting [Menu] → [Quit] gives the same result.

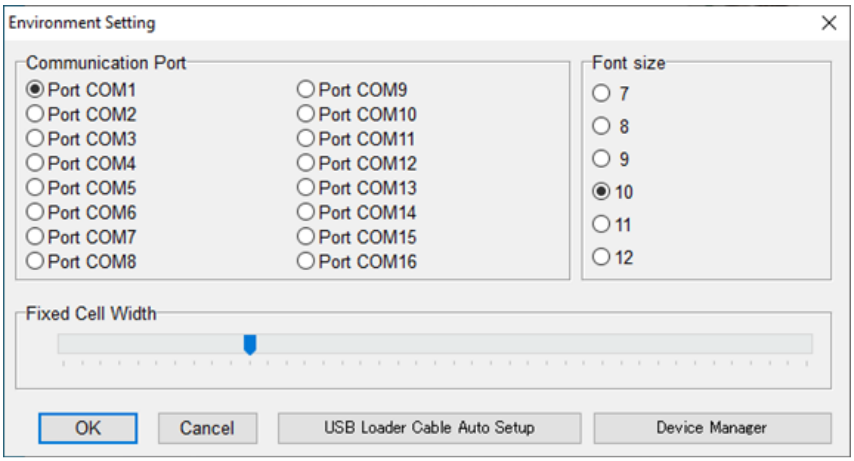
>> The loader quits.

■ Checking the communication port number

Select [Control Panel] → [Device Manager] and see [Port (COM and LPT)] to check the COM number for "Yamatake USB Loader Comm.port."



Start the SLP, open the [Menu] → [Option], set the communications port number you identified in the previous step, and click the [OK] button to complete the configuration.



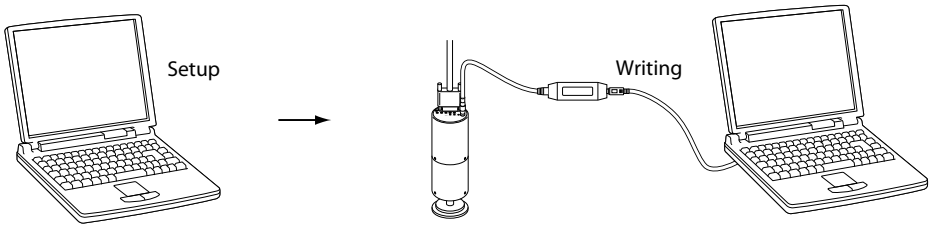
Chapter 3. HOW TO USE THE LOADER

3 - 1 Overview

■ Overview

The loader works in both offline and online modes

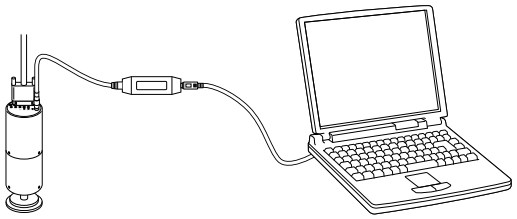
- **Offline mode**
  The settings for the SPG can be configured in offline mode (when the loader cable is not connected to the SPG), and then the data can be written to the SPG later in one batch.
  The settings can also be written to a different SPG with the same model No.



[!] Handling Precautions

- Once the data is read from the SPG via the loader cable, it can be edited. If the data is not read, it is not displayed on the screen and cannot be edited.

- **Online mode**
  You can monitor, operate, and adjust the SPG, and change its settings in online mode in real time (when the loader cable is connected to the SPG).



The loader has basic and standard modes. Initially, the loader starts in basic mode.
In basic mode, the monitor, unit of display, and event values can be changed.
In standard mode, all loader functions can be used.

■ Function Overview

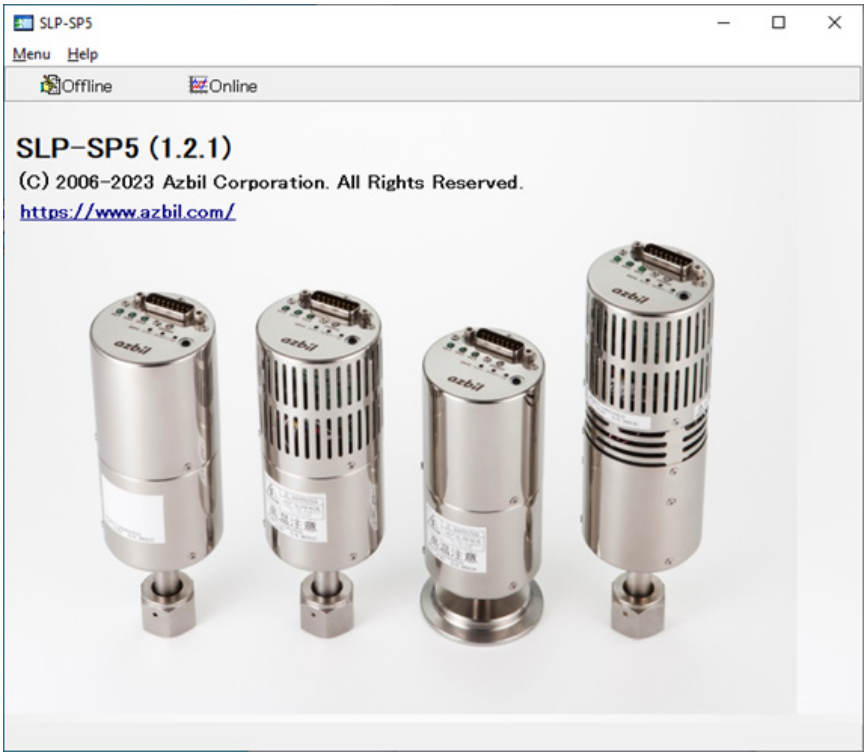
The loader functions are listed in the table below.
Offline and online functions in basic and standard modes are listed below.

Function	Description	Offline		Online	
		Basic	Standard	Basic	Standard
Monitor	Measurements, operation status, and diagnostics can be monitored.	-	-	✓	✓
Operation	0-10 V output and event relays can be manually operated, and accordingly the instrumentation can be checked.	-	-	-	✓
Parameters	0-10 V output, event relay settings, and filter time constant can be changed.	✓*	✓	✓*	✓
Adjustment data	The pressure reading and 0-10 V output adjustment data can be changed.	-	-	-	✓
Initialization	Parameters and adjustment data can be initialized to the default settings.	-	-	-	✓
Adjustment	Adjustment is possible.	-	-	-	✓
Trend Monitor	Pressure readings and the internal state of the SPG can be monitored with trend graphs.	-	-	✓	✓

* Only the unit of display and the event relay setpoint can be changed.

■ Description of the screens

● Offline and online startup screen

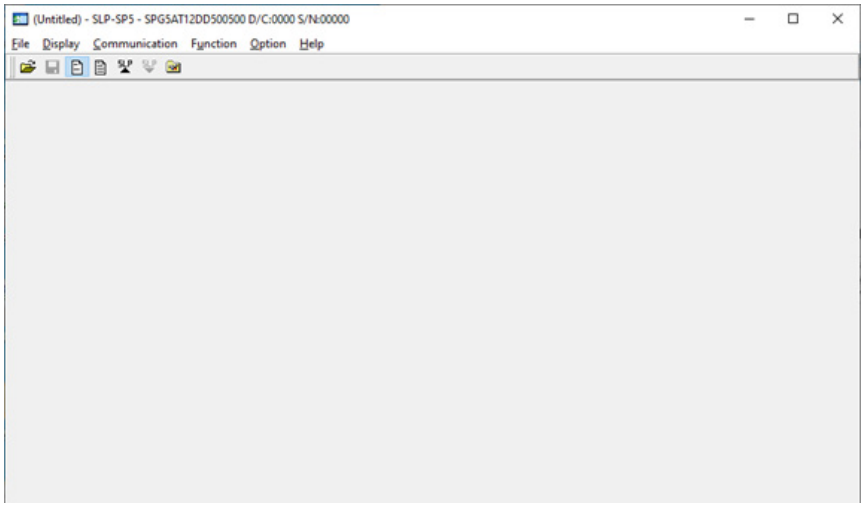


• Menu configuration list

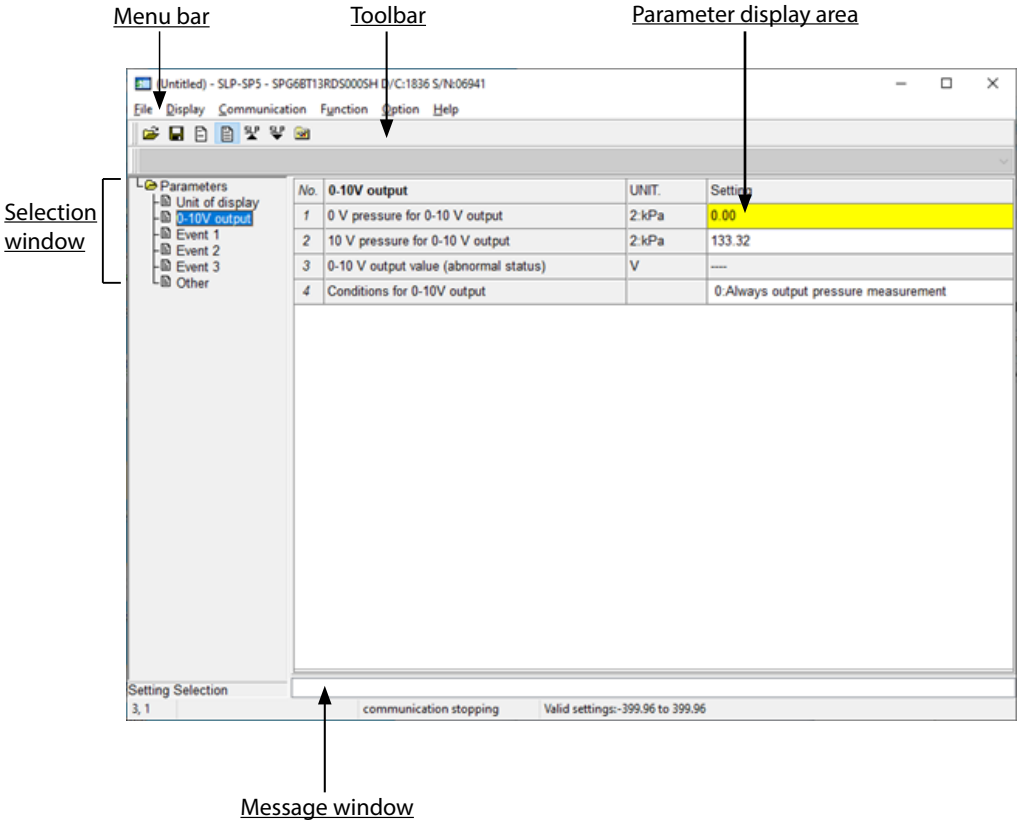
Menu	Icon	Submenu	Description	Shortcut Keys
Menu		Offline (S)	Starts the loader in offline mode.	[Ctrl] + [S]
		Online (M)	Starts the loader in online mode.	[Ctrl] + [M]
	—	Option (E)	Changes the environment settings.	[Ctrl] + [E]
	—	Quit	Quits the application.	[Ctrl] + [Q]
Help	—	Version	Displays the version information.	[Ctrl] + [A]

- **Offline (Data Display Screen)**

  The initial startup screen



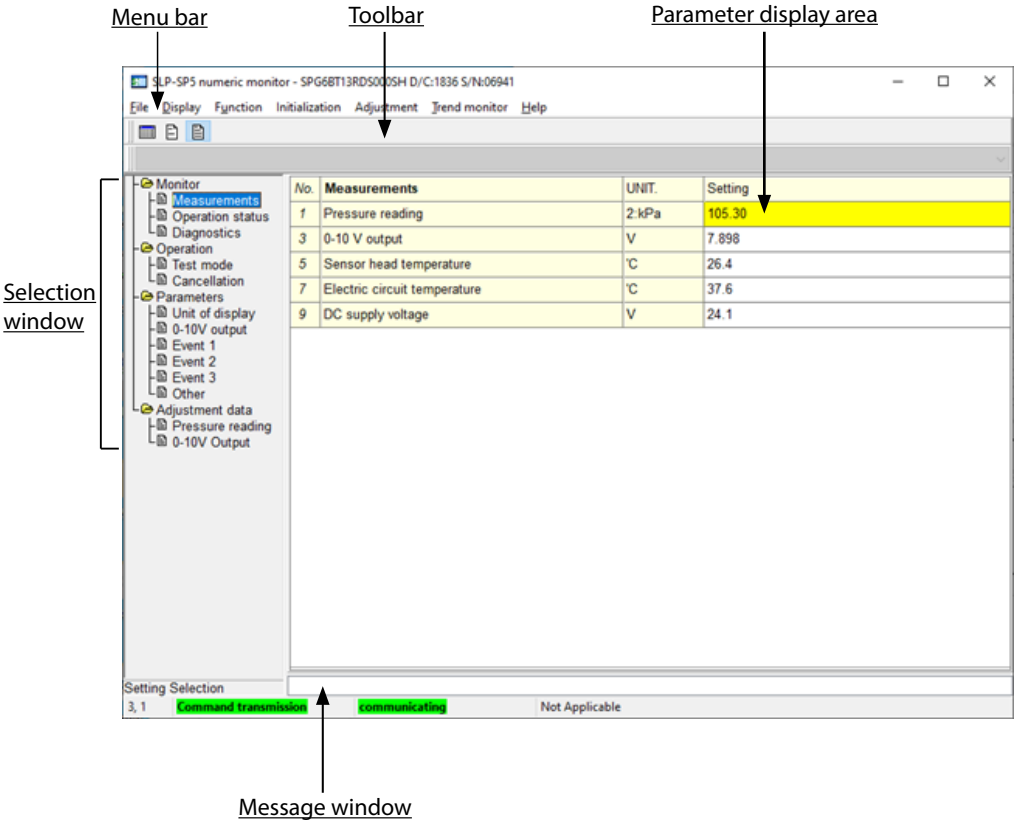
The screen displayed after data read



• Menu configuration list

Menu	Icon	Submenu 1	Submenu 2	Description	Shortcut Keys
File		Open	-	Opens existing data.	[Ctrl]+[O]
		Save	-	Saves the active data.	[Ctrl]+[S]
	-	Save As	-	Saves the active data with a new name.	[Ctrl]+[A]
	-	CSV out (X)	-	Outputs the data in CSV file format.	[Ctrl]+[X]
	-	HTML out (H)	-	Outputs the data in HTML file format.	[Ctrl]+[H]
	-	Recent File	Displays the list of recently used files.	Displays the recently used files that have been saved.	-
	-	Quit	-	Quits the application.	[Ctrl]+[Q]
Display		Basic (L1)	-	Displays functions available in basic mode.	-
		Standard (L2)	-	Displays all functions.	-
	-	Parameter disp area	-	Displays the parameter display area.	-
	-	Hint disp	-	Enables hint display.	-
	-	Auto size	-	Enables auto-cell size.	-
Communication		Read (SPG → SLP) (R)	-	Reads the data from the SPG.	[Ctrl]+[R]
		Write (SLP → SPG) (W)	-	Writes the data to the SPG.	[Ctrl]+[W]
Function	-	Parameters	Unit of display	Sets the unit of display.	[Shift]+[Ctrl]+[F]
			0-10 V output	Sets the 0-10 V output operation.	[Shift]+[Ctrl]+[G]
			Event 1	Sets the Event 1 operation.	[Shift]+[Ctrl]+[I]
			Event 2	Sets the Event 2 operation.	[Shift]+[Ctrl]+[J]
			Event 3	Sets the Event 3 operation.	[Shift]+[Ctrl]+[K]
			Other	Sets the other operations.	[Shift]+[Ctrl]+[N]
Option		Environment Setting ...	-	Changes the operating environment.	[Ctrl]+[E]
Help	-	Version (A)	-	Displays the version information.	-

● **Online (Data Display Screen)**



• Menu configuration list

Menu	Icon	Submenu 1	Submenu 2	Description	Shortcut Keys
File		Communication Start/Stop	-	Switches between communication start and stop.	-
	-	CSV out (X)	-	Outputs the data in CSV file format.	[Ctrl]+[X]
	-	HTML out (H)	-	Outputs the data in HTML file format.	[Ctrl]+[H]
	-	Quit	-	Quits the application	[Ctrl]+[Q]
Display		Basic (L1)	-	Displays functions available in basic mode.	-
		Standard (L2)	-	Displays all functions.	-
	-	Parameter disp area	-	Shows the parameter display area.	-
	-	Hint disp	-	Enables the hint display.	-
	-	Auto size	-	Enables auto-cell size.	-

Menu	Icon	Submenu 1	Submenu 2	Description	Shortcut Keys
Function	-	Monitor	Measurements	Monitors the measurement data.	[Shift] + [Ctrl] + [A]
			Operation status	Monitors the operation status.	[Shift] + [Ctrl] + [B]
			Diagnostics	Monitors the diagnostics.	[Shift] + [Ctrl] + [C]
	-	Operation	Test mode	Operates in test mode.	[Shift] + [Ctrl] + [D]
			Cancellation	Cancels test mode.	[Shift] + [Ctrl] + [E]
	-	Parameters	Unit of display	Sets the unit of display.	[Shift] + [Ctrl] + [F]
			0-10 V output	Sets the 0-10 V output operation.	[Shift] + [Ctrl] + [G]
			Event 1	Sets Event 1 operation.	[Shift] + [Ctrl] + [I]
			Event 2	Sets Event 2 operation.	[Shift] + [Ctrl] + [J]
			Event 3	Sets Event 3 operation.	[Shift] + [Ctrl] + [K]
			Other	Sets other operations.	[Shift] + [Ctrl] + [N]
	-	Adjustment data	Pressure reading	Sets the adjustment data for the pressure reading	[Shift] + [Ctrl] + [O]
			0-10 V Output	Sets the 0-10 V output adjustment data.	[Shift] + [Ctrl] + [P]
Initialization	-	Parameters	All parameters	Initializes all parameters.	-
			0-10 V output parameters	Initializes the 0-10 V output parameters.	-
			Event parameters	Initializes the event parameters.	-
			Other parameters	Initializes other miscellaneous parameters.	-
	-	Adjustment data	All adjustment data	Initializes all adjustment data.	-
			Measured pressure adjustment data	Initializes the measured pressure adjustment data.	-
			0-10 V output adjustment data	Initializes the 0-10 V output adjustment data.	-
Adjustment	-	Auto zero adjustment	-	Executes Auto-zero adjustment.	-
	-	Bias adjustment value reset	-	Resets the bias adjustment value.	-
Trend monitor	-	-	-	Displays the trend monitor screen.	-
Help	-	Version (A)	-	Displays the version information.	-

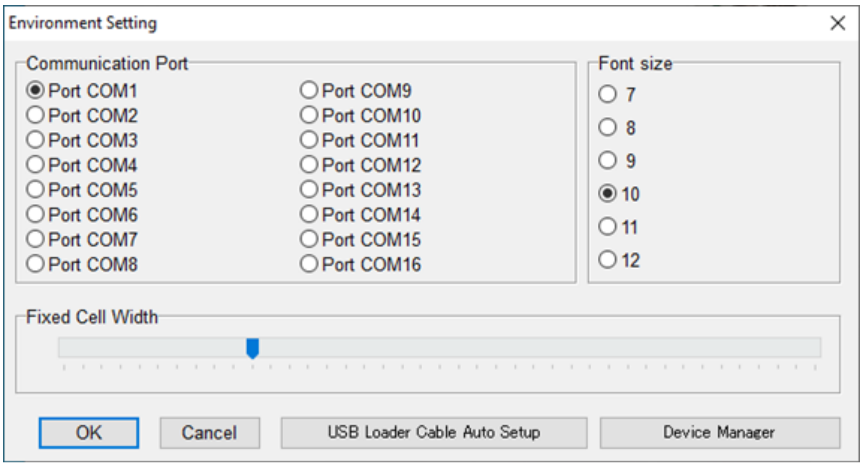
3 - 2 How to Operate the Model SPG_ _

■ Offline

Follow the steps below.
Step 1: Set up the environment
Step 2: Read the data from the device
Step 3: Save the data
Step 4: Edit the data
Step 5: Write the data

● Step 1. Set up the environment

(1) Select [Option] from the menu in [Offline and online startup screen].
>>The Environment Setting dialog box appears.



(2) Select the communication port.

(3) Select the desired font size.

(4) Click the [OK] button.

● Step 2. Reads the device's data.

(1) Connect the SPG to the personal computer using the included loader cable.

(2) Click the  offline icon on the [Tool bar].
Selecting [Menu] → [Offline] from the pull-down menu gives the same result.
>> The offline [Data Display Screen] appears.

(3) Click the  icon.
Selecting [Communication] → [Read (SPG → SLP) Ctrl+R] gives the same result.
>>[Start to read] is displayed.

(4) Click the [OK] button.
>> Data read starts.
Wile the data is being read from the SPG, [Wait] is displayed, and when data read is complete, [Read Complete] is displayed. Click the [OK] button.

Handling Precautions

- If reading fails, the message, "Communications error has occurred" appears.
  ☞ Chapter 4. TROUBLESHOOTING.

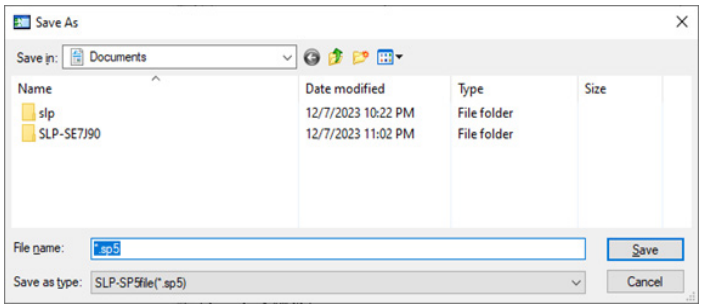
● Step 3. Save setup data

When the data has been read, save the data.

(1) Click the  icon.

Selecting [File] → [Save As] from the pull-down menu gives the same result.

>>The [Save As] dialog box appears.



(2) Enter the desired file name and click the [Save] button.
(3) If the file is not immediately needed, you can disconnect the loader cable.
(4) If the file is not immediately needed, you can also close the software.

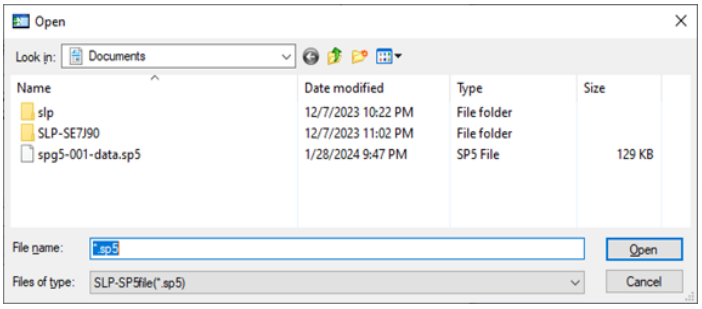
● Step 4. Edit the data

If you had closed the software in step 3, open the file you saved.

(1) Click the  icon in [Data Display Screen].

Selecting [File] → [Open] from the pull-down menu gives the same result.

>> The [Open] file open dialog box is displayed.



(2) Enter the desired file name and click the [Open] button.
(3) Configure the necessary parameter settings as desired.
☞ "■ Parameters (available in both offline and online modes)" on page 31.
(4) Save the data following step 3. Save setup data.

● Step 5. Write the data to the device.

Write the configured parameters to the SPG.

(1) Connect the SPG to the personal computer using the special loader cable.

(2) Click the  icon.
Selecting [Communication] → [Write (SLP → SPG) Ctrl+W] from the pull-down menu gives the same result.
>> The message, "Start to write?" is displayed.

(3) Click the [OK] button.
>> Data write to the device starts. Wile the data is being written to the SPG, the message [wait] is displayed. When data write is complete, [Write Complete] is displayed. Click the [OK] button.

Handling Precautions

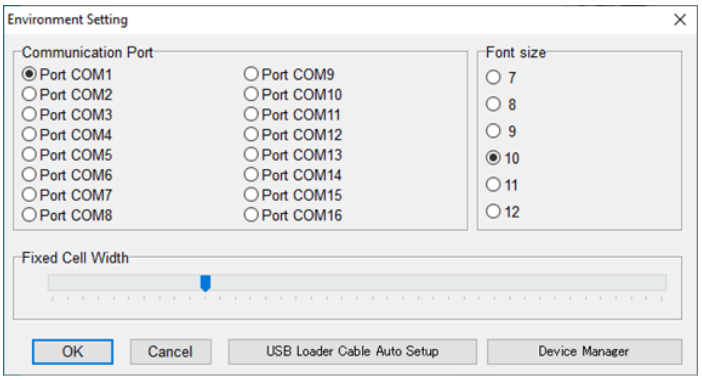
- If writing fails, the message, "Communications error has occurred" appears
☞ Chapter 4. TROUBLESHOOTING.
- While writing or reading of data is in progress, do not disconnect the SPG to replace it with another one. Data will be corrupted.

■ Online

Follow the steps below.
Step 1: Set up the environment
Step 2: Establish communication with the SPG

● Step 1. Set up the environment

(1) Select [Option] from the menu in [Offline and online startup screen].
>>The Environment Setting dialog box appears.



(2) Select the communication port.

(3) Select the desired font size.

(4) Click the [OK] button.

- **Step 2. Establish communication with the SPG**

(1) Connect the SPG to the personal computer using the included loader cable.

(2) Click the  online icon in [Offline and online startup screen].
Selecting [Menu] → [Online] from the pull-down menu gives the same result.
>> The online [Data Display Screen (numeric monitor)] starts.
Normal status: The data stored in the SPG is displayed.
[Communicating] is displayed at the lower left corner of the screen. While it is displayed, communication is established.
While [Communication stopping] is displayed, communication is not established or is stopped.
By using the  icon, [Communication Start/Stop] can be switched.
Selecting [File]→[Communication Start/Stop] from the pull-down menu gives the same result.
Abnormal status: The message, "Communications error has occurred" appears.
☞ "Chapter 4. TROUBLESHOOTING."

(3) Configure the necessary settings for the Monitor, Operation, Parameters, and Adjustment.
☞ 3-3 Function Details (p. 28).

Handling Precautions

- While the SPG is in online mode and communicating, do not disconnect it to replace it with another one. Data will be corrupted. Before swapping, temporarily quit online mode.

■ Changing of data

- **When entering numeric values:**

  Enter the numerical value and press the [Enter] key.
  In offline mode, the numerical value is stored as it is.
  In online mode, when the [Change] popup window appears, click the [OK] button.
  Communication will be established and the data will be written to the SPG.

Handling Precautions

- As a result of internal calculation, the least significant digit may be changed.
- As a result of internal calculation, the least significant digit near either of the range high or low limits may be judged outside the range limit, with the result that the number cannot be input.

- **When selecting a setting item:**

  Right-clicking displays a pull-down menu. Select the desired item.
  Or you can select the item by entering the number for that item and pressing the [Enter] key.
  Or you can select the desired item in the parameter display area.
  In offline mode, your selection is immediately input.
  In online mode, when the [Change] popup window appears, click the [OK] button.
  Communication will be established and the data will be written to the SPG.

Handling Precautions

- If writing fails, the message, "Communications error has occurred" appears
  ☞ Chapter 4. TROUBLESHOOTING.

■ How to change between Basic and Standard modes

Click the  icon (basic) or the  icon (standard) in [Data Display Screen].

Selecting [Display] → [Basic] or [Standard] from the pull-down menu gives the same result.

Handling Precautions

- In offline basic mode, data is read and written from/to parameters that are not displayed. Note that if data read from other devices is used, such parameters may be changed too.

3 - 3 Function Details

■ Monitor (available only in online mode)

Pressure readings and the SPG status can be monitored.
This function can be executed from the selection window or from [Function] on the menu bar.

● Measurements

Item	Unit	Description	Display item	Basic	Standard
Pressure reading	*	Displays the measured pressure. Over Range is displayed when the value is over-range.	Numeric value	✓	✓
0-10 V output	V	Displays the output voltage.	Numeric value	✓	✓
Sensor head temperature	°C	Displays the temperature of the sensor head.	Numeric value	✓	✓
Electric circuit temperature	°C	Displays the temperature of the electronic circuits. • If this temperature exceeds 85 °C, the specifications for the operating ambient temperature range and cooling air may not be met. Take countermeasures.	Numeric value	✓	✓
DC supply voltage	V	Displays the power supply voltage. • If this value is outside of the specifications for the power supply voltage range, check the power supply and take countermeasures. However, since the voltage is measured after the built-in diode, the indicated value is lower than the actual input voltage by 0 to 0.4 V. When the SPG is used at ±15 V, the difference between + and - voltages is displayed.	Numeric value	✓	✓

* The unit specified for "Unit of display" in the parameter submenu.

● Operation status

Item	Unit	Description	Display item	Basic	Standard
Warm-up	-	Indicates whether warm-up is complete or not. For models without self-heating, the warm-up period ends when the power is turned on.	Complete Incomplete	✓	✓
Failure status	-	Indicates whether there is a device failure in the SPG.	No Failure Failure	✓	✓
Alarm status	-	Indicates whether there is an abnormality in temperature or power supply voltage, etc.	No alarms Active alarm	✓	✓
Operation mode	-	Indicates whether manual operation is in progress.	Regular operation Manual operation	✓	✓
Event 1	-	Indicates the ON-OFF status of event 1.	ON OFF	✓	✓
Event 2	-	Indicates the ON-OFF status of event 2.	ON OFF	✓	✓
Event 3	-	Indicates the ON-OFF status of event 3.	ON OFF	✓	✓
Event latch	-	Indicates whether there is an event latch.	No latch Latched	✓	✓

● Diagnostics

Item	Unit	Description	Display item	Basic	Standard
Device/component status: Heater	-	Indicates whether there is a heater burnout.*	Normal Disconnected	✓	✓
Device/component status: Memory	-	Indicates whether there is a memory failure.	Normal Faulty	✓	✓
Device/component status: Electrical circuits	-	Indicates whether there is an electronic circuit failure.	Normal Faulty	✓	✓
Alarms: Electric circuit temperature	-	Indicates whether there is an abnormality in temperature of the electronic circuits.	Normal High limit alarm Low limit alarm	✓	✓
Alarms: Sensor head temperature	-	Indicates whether there is an abnormality in temperature of the sensor head.	Normal High limit alarm Low limit alarm	✓	✓
Alarms: Heater temperature	-	Indicates whether there is an abnormality in temperature of the heater.*	Normal High limit alarm Low limit alarm	✓	✓
Alarms: Self-heating control	-	Indicates whether there is an abnormality in self-heating control.*	Normal Alarm	✓	✓
Alarms: DC supply voltage	-	Indicates whether there is an abnormality in power supply voltage.	Normal Alarm	✓	✓

* For self-heating models only

Handling Precautions

- If an alarm occurs, the instrumentation may have a problem.
  Check the instrumentation conditions once again.
- If a device failure occurs, contact Azbil Corporation or a sales representative.

■ Operation (available only in online mode)

0-10 V output and event relays can be manually operated, and accordingly the instrumentation can be checked.
This function can be executed from the selection window or from [Function] on the menu bar.

● Test mode

Item	Unit	Description	Setting range	Basic	Standard
Pressure measurement simulation	-	Executes and cancels pressure measurement simulation.	• Cancel • Execute	-	✓
Simulated pressure value	*	During the pressure measurement simulation, 0-10 V output and event relays work according to the setting for this item.	Pressure equivalent to -20 to +120 % FS of the pressure range specified by the model No	-	✓
0-10 V output simulation	-	Executes and cancels the 0-10 V output simulation.	• Cancel • Execute	-	✓
0-10 V output simulation value	V	During the 0-10 V output simulation, 0-10 V output works according to the setting for this item.	-1.000 to + 11.500 V	-	✓
Event 1 simulation	-	Executes and cancels event 1 simulation.	• Cancel event simulation • Force event ON • Force event OFF	-	✓
Event 2 simulation	-	Executes and cancels event 2 simulation.	• Cancel event simulation • Force event ON • Force event OFF	-	✓
Event 3 simulation	-	Executes and cancels event 3 simulation.	• Cancel event simulation • Force event ON • Force event OFF	-	✓

Note The green and red SPG status LEDs light up alternately in test mode. When regular mode is switched to test mode, the values before switching remain as the initial values.
* The unit specified for "Unit of display" in the parameter submenu.

[!] Handling Precautions

- Simulation mode is cancelled when the SPG power supply is turned OFF.

● Cancellation

Item	Unit	Description	Setting range	Basic	Standard
Test mode	-	Cancels simulation mode in one batch.	• Cancel test mode	-	✓
Event latches	-	Cancels event latch.	• Release latch (es)	-	✓

[!] Handling Precautions

- Do not forget to cancel test mode. Otherwise, normal operation is not possible.

■ Parameters (available in both offline and online modes)

You can change the settings for 0-10 V output and event relays.
This function can be executed from the selection window or from [Function] on the menu bar.

● Unit of display

Item	Unit	Description	Setting range	Default setting	Basic	Standard
Pressure measurement unit	-	You can select the unit of pressure , such as the measured pressure or 10 V pressure for 0-10 V output, displayed on the loader. • You can change the unit of pressure displayed on the loader. However, you cannot change the unit on the SPG. • If the unit is changed, this change may modify the least significant digit of the 5 significant digits due to rounding.	• Pa • hPa • kPa • MPa • mbar • bar • Torr • mTorr	Unit of pressure specified for the pressure range by the model No.*	✓	✓

* Unit changes to this default when loader restarts or SPG is swapped in.

● 0-10 V output

Item	Unit	Description	Setting range	Default setting	Basic	Standard
0 V pressure for 0-10 V output	*1	Sets the value of pressure for 0 V output.	-300 to +300 % FS *2	0 % FS	-	✓
10 V pressure for 0-10 V output	*1	Sets the value of pressure for 10 V output.	-300 to +300 % FS *2	100 % FS	-	✓
0-10 V output value (abnormal status)	V	Sets the value of the output for when the condition mentioned below is met.	-1.000 to +11.500 V	11.500 V	-	✓
Conditions for 0-10 V output	-	Selects the condition for output at abnormal pressure.	• Always output pressure measurement • During warm-up or abnormal status • When status is abnormal	*3	-	✓

*1 The unit specified for "Unit of display" in the parameter submenu.

*2 It does not matter that 0 V pressure for 0-10 V output or 10 V pressure for 0-10 V output is larger than the other.

Note 0-10 V output is generated according to the following calculation formula.

$$\text{0-10 V output} = 10\text{ V} \times \frac{\text{Pressure reading} - (\text{0 V pressure for 0-10 V output})}{(\text{10 V pressure for 0-10 V output}) - (\text{0 V pressure for 0-10 V output})}$$

[!] Handling Precautions

- If pressure settings for 0-10 V output are changed, output accuracy is affected.
  If 0 V pressure for 0-10 V output < 10 V pressure for 0-10 V output, 11 V is output when the pressure exceeds the measurement range.
  If 0 V pressure for 0-10 V output > 10 V pressure for 0-10 V output, -0.5 V is output when the pressure exceeds the measurement range.

Note

- Based on the output voltage at 0 % FS and the output voltage at 100 % FS, to calculate 0 V pressure for 0-10 V output and 10 V pressure for 0-10 V output , use the following formula.

$$\text{0 V pressure for 0-10 V output} = \text{100 \% FS pressure} \times \frac{\text{0 V - (output voltage at 0 \% FS pressure)}}{\text{(output voltage at 100 \% FS pressure) - (output voltage at 0 \% FS pressure)}}$$

$$\text{10 V pressure for 0-10 V output} = \text{100 \% FS pressure} \times \frac{\text{10 V - (output voltage at 0 \% FS pressure)}}{\text{(output voltage at 100 \% FS pressure) - (output voltage at 0 \% FS pressure)}}$$

*3 Default setting Always output pressure measurement

Events 1, 2, and 3

Item	Unit	Description	Setting range	Default setting	Basic	Standard
Operation type	-	Selects the operation type to synchronize.	• Always OFF. • Normal status: ON, Abnormal status: OFF. • Normal status: OFF, Abnormal status: ON. • Normal status: ON, Abnormal status: latch OFF. • Normal status: OFF, Abnormal status: latch ON. • Warm-up done: ON, Warm-up in progress or abnormal status: OFF. • Warm-up done: OFF, Warm-up in progress or abnormal status: ON. • Warm-up done: ON, In progress: OFF, Abnormal status: OFF latch. • Warm-up done: OFF, In progress: ON, Abnormal status: ON latch. • Pressure high limit (Direct action) • Pressure low limit (Direct action) • Pressure high limit (Reverse action) • Pressure low limit (Reverse action) • Deviation high / low limit (Direct action) • Deviation high / low limit (Reverse action)	*1, *2	-	✓
Condition for pressure synchronization	-	Selects the operating condition when pressure synchronization is set.	• Always synchronize with measured pressure • Force ON when status abnormal • Force OFF when status abnormal • Latch ON when status abnormal • Latch OFF when status abnormal • Force ON during warm-up or abnormal status • Force OFF during warm-up or abnormal status • Force ON during warm-up, latch ON when status abnormal • Force OFF during warm-up, latch OFF when status abnormal	*3	-	✓
Setpoint	*4	Sets the setpoint when pressure synchronization is set.	−10 to +110 % FS	50 % FS	✓	✓
Hysteresis	*4	Sets the hysteresis when pressure synchronization is set.	0 to 20 % FS *5	0.5 % FS	-	✓
Deviation	*4	Sets the deviation when when pressure synchronization is set.	0 to 50 % FS *5	10 % FS	-	✓

*1 Event 1, 2 default setting: Pressure low limit (Direct action)

*2 Event 3 default setting: Warm-up done: ON, Warm-up in progress or abnormal status: OFF

*3 Default setting: Always synchronize with measured pressure

*4 The unit specified for "Unit of display" in the parameter submenu.

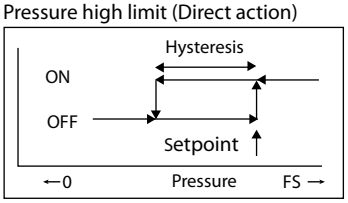
*5 Note that the closer to 0 the value becomes, the more likely chattering occurs due to pressure fluctuations.

Handling Precautions

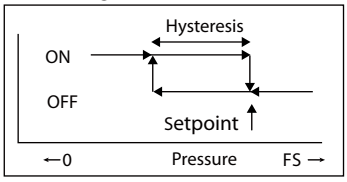
- The event latch is cancelled when the SPG power supply is turned OFF.
- The event latch is canceled if one of the event parameters is changed.
- Even if the ON or OFF state of the relay is not changed after the operation type of the event is changed, the relay may operate for a moment.

• Operation charts for pressure synchronization of an event relay

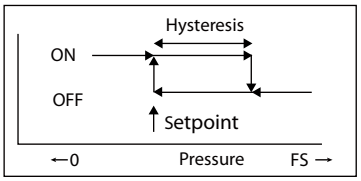
Pressure high limit (Direct action)



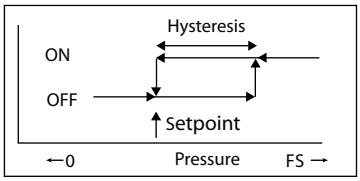
Pressure high limit (Reverse action)



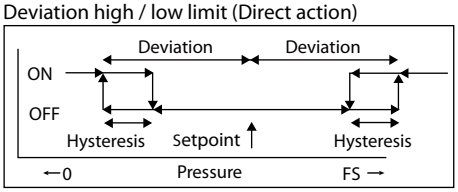
Pressure low limit (Direct action)



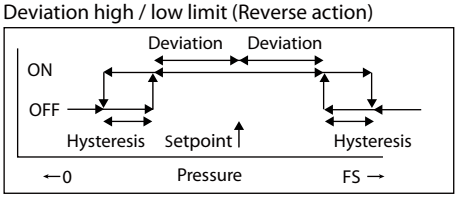
Pressure low limit (Reverse action)



Deviation high / low limit (Direct action)

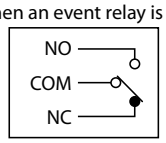


Deviation high / low limit (Reverse action)

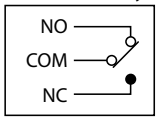


• Event relay operation diagrams

When an event relay is OFF



When an event relay is ON



When the power is OFF, the event relay is OFF.

● Others

Item	Unit	Description	Setting range	Default setting	Basic	Standard
1st order filter time constant	s	Can change 1st order filter time constant.*1	0.0 to 10.0	0.0	-	✓
Self-heating temperature	°C	Displays the self-heating temperature. The setting cannot be changed. * For self-heating models only.	-	Model specific value	-	✓

*1 The 1st order filter time constant is the approximate time from when the step response pressure is applied till when the pressure reading shows about 63 % of it.
Set this item to prevent the output from being affected by pressure pulses or the like.

■ Adjustment data (available only in online mode)

You can change the adjustment data of the pressure reading and 0-10 V output. This function can be executed from the selection window or from [Function] on the menu bar.

● Pressure reading

Item	Unit	Description	Setting range	Default setting	Basic	Stan-dard
Pressure ratio	-	Can change the pressure ratio.	0.9001 to 1.0999	1.0000	-	✓
Pressure bias	*1	Can change the pressure bias.*2	±20 % FS	0	-	✓

Note. The pressure ratio and bias are used for the following calculation.
Pressure reading = internal pressure measurement x pressure ratio + pressure bias

*1 The unit of display specified in the parameter submenu.

*2 If zero adjustment is executed using the zero adjustment switch or Up/Down zero adjustment switch on the top of the SPG, the pressure bias is changed synchronously.

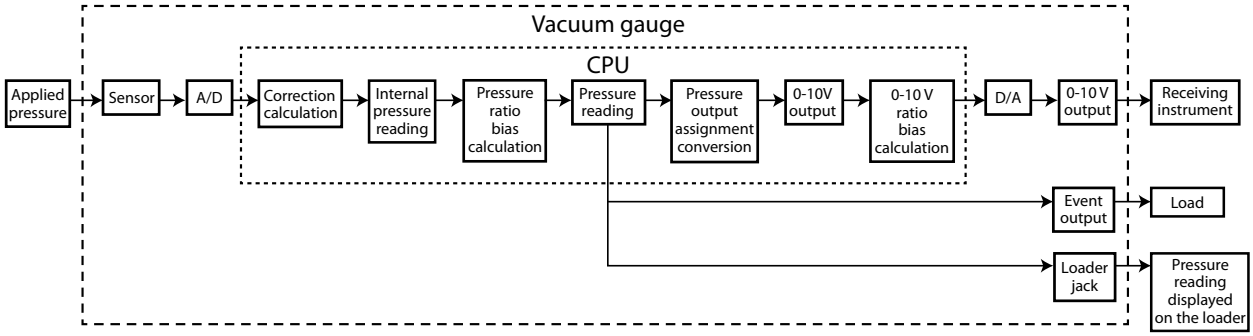
● 0-10 V Output

Item	Unit	Description	Setting range	Default setting	Basic	Stan-dard
0-10 V output ratio	-	Can change the 0-10 V output ratio.	0.9001 to 1.0999	1.0000	-	✓
0-10 V output bias	V	Can change the 0-10 V output bias.	-1.000 to +1.000	0.000	-	✓

Note. 0-10 V output ratio and bias are used for the following calculation.
0-10 V output = internal 0-10 V output × 0-10 V output ratio + 0-10 V output bias

Note

- The block diagram of SPG internal calculation is shown below.



● **Points for adjustment**

- If zero adjustment is executed using the zero adjustment switch or Up/Down zero adjustment switch on the top of the SPG, the pressure bias is overwritten.
- To adjust span (inclination), change the pressure ratio.

! Handling Precautions

- The span (inclination) cannot be properly adjusted without a pressure standard. If the equipment is not available, please contact Azbil Corporation for readjustment.

Follow the steps below to adjust the span (inclination).

(1) Set the pressure bias to 0 and the pressure ratio to 1.

(2) Apply pressure of around 100 % FS, and record the pressure reading indicated on the loader and the indicated value on the pressure standard.

(3) Decrease pressure to near 0 % FS, and record the pressure reading indicated on the loader and the indicated value on the pressure standard.

(4) Execute the following calculations to configure the pressure bias and the pressure ratio.

$$\text{Pressure bias} = \frac{(\text{Pressure reading near 100 \% FS on the SPG} \times \text{Pressure reading near 0 \% FS on the pressure standard}) - (\text{Pressure reading near 0 \% FS on the SPG} \times \text{Pressure reading near 100 \% FS on the pressure standard})}{\text{Pressure reading near 100 \% FS on the SPG} - \text{Pressure reading near 0 \% FS on the pressure standard}}$$

$$\text{Pressure ratio} = \frac{\text{Pressure reading near 100 \% FS on the SPG} - \text{Pressure reading near 0 \% FS on the pressure standard}}{\text{Pressure reading near 100 \% FS on the SPG} - \text{Pressure reading near 0 \% FS on the SPG}}$$

(5) Apply pressure again after configuration, and confirm that the pressure readings on the pressure standard match those on the SPG.

- To adjust the pressure reading shown in the internal block diagram on the previous page, make zero adjustment using the Auto zero adjustment switch or Up/Down zero adjustment switch on the top of the SPG. or adjust the pressure bias and ratio using the loader. If a deviation occurs in the 0-10 V output circuit of the SPG or in the 0-10 V input circuit of the receiving instrument, adjust the 0-10 V output ratio and bias.

! Handling Precautions

- 0-10 V output cannot be properly adjusted without a pressure standard. If the equipment is not available, contact Azbil Corporation for readjustment.

Follow the steps below to adjust the 0-10 V output ratio and bias.

(1) Set the 0-10 V output bias to 0 and the 0-10 V output ratio to 1.

(2) Manually output 0 V using the 0-10 V output simulation, and record the voltage indicated by the voltage standard.

(3) Manually output 10 V using the 0-10 V output simulation, and record the voltage indicated by the voltage standard.

(4) Execute the following calculations to configure the 0-10 V output bias and 0-10 V output ratio.

$$\text{0-10 V output bias} = \frac{(-10) \times (\text{Voltage indicated on the voltage standard when 0 V is manually output})}{(\text{Voltage indicated on the voltage standard when 10 V is manually output}) - (\text{Voltage indicated on the voltage standard when 0 V is manually output})}$$

$$\text{0-10 V output ratio} = \frac{10}{(\text{Voltage indicated on the voltage standard when 10 V is manually output}) - (\text{Voltage indicated on the voltage standard when 0 V is manually output})}$$

(5) Output 0-10 V manually again after configuration, and confirm that the manual outputs matches the indicated value on the voltage standard.

■ Initialization (available only in online mode)

This function can be executed from [Initialization] on the menu bar.

● Parameters

Item	Description	Basic	Standard
All parameters	Initializes all of the parameters of the following items to the default settings. • 0-10 V output • Events 1, 2, and 3 • Others	-	✓
0-10 V output parameters	Initializes the 0-10 V output parameters to the default settings.	-	✓
Event parameters	Initializes the parameters of Event 1, 2, and 3 to the default settings.	-	✓
Other parameters	Initializes other parameters to the default settings.	-	✓

● Adjustment data

Item	Description	Basic	Standard
All adjustment data	Initializes all of the following adjustment data to the default settings. • Measured pressure adjustment data • 0-10 V output adjustment data	-	✓
Measured pressure adjustment data	Initializes the measured pressure adjustment data to the default settings.	-	✓
0-10 V output adjustment data	Initializes the 0-10 V output adjustment data to the default settings.	-	✓

Handling Precautions

- Note the following when initialization is executed.
  - The warm-up signal may be cancelled once. In this case, use the SPG after warm-up is completed.
  - Even if the settings are the same as the defaults, initialization may change the event output and 0-10 V output for a moment.

■ Adjustment (available only in online mode)

This function can be executed from [Adjustment] on the menu bar.

Item	Description	Basic	Standard
Auto zero adjustment	Can execute Auto zero adjustment as the Auto zero adjustment switch on the top of the SPG can.	-	✓
Bias adjustment value reset	Resets the bias adjustment value to zero. •The zero adjustment value used for the zero adjustment switch on the top of the SPG is stored as the bias adjustment value. This function resets the value to zero.	-	✓

Handling Precautions

- Conduct adjustment after warm-up is completed.

● Auto zero adjustment

Follow the steps below.

(1) Select [Adjustment] → [Auto zero adjustment] from the menu bar.

(2) [Pressure bias value reset is executed. The adjustment data is overwritten.] appears. Click the [OK] button.

● Bias adjustment value reset

Follow the steps below.

(1) Select [Adjustment] → [Bias adjustment value reset] from the menu bar.

(2) [Pressure bias value reset is executed. The adjustment data is overwritten.] appears. Click the [OK] button.

■ Trend monitor screen (available only in online mode)

● Overview

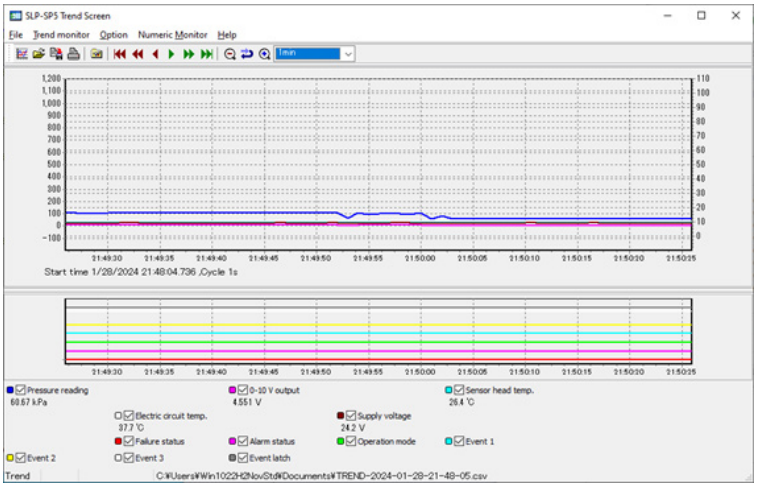
This screen monitors operating status trends.

- Monitors up to 5 trend data records.
- Monitors up to 8 digital data records.
- Converts collected data into a CSV file.
- Copies trend screens.
- The collection cycle: 1 to 3600 s. (variable or at the highest transmission speed)
- Maximum number of collection times: 60000 cycles (constant regardless of the number of collected data records)
- If the number of collection times exceeds the limit, new data is automatically stored in the next file.

Note

- The CSV file is a data format that can be handled by spreadsheet software applications such as Microsoft Excel. The collected trend data can be analyzed using spreadsheet software.

● Trend screen



• Menu configuration list

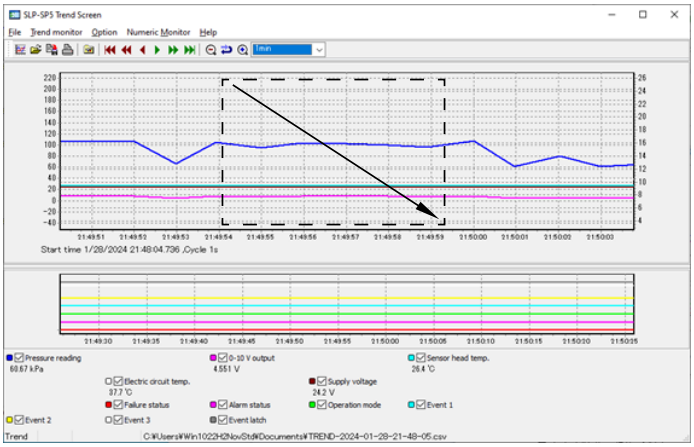
Menu	Icon	Submenu	Description	Shortcut Keys
File		Print	Prints data.	-
	-	Quit	Quits the monitor window.	[Ctrl] + [Q]
Trend monitor		Trend Monitor Start/Stop	Starts and stops the trend monitor.	[Ctrl] + [T]
		CSV Read	Loads CSV data.	-
		Clipboard Graph Out	Copies the chart image to the clipboard.	[Ctrl] + [C]
Option		Setup	Displays the setup window.	-
Numeric Monitor	-	-	Switches the display to the numeric monitor.	-
Help	-	Version (A)	Displays the version information.	-

• Icon list

Icon	Description
	Returns the graph to the start time.
	Rolls back the graph 1/2 screen to the left.
	Rolls back the graph 1/4 screen to the left.
	Advances the graph 1/4 screen to the right.
	Advances the graph 1/2 screen to the right.
	Advances the graph to the latest time.
	Zooms the graph out.
	Undoes the graph zoom.
	Zooms the graph in.
	Specifies a time scale for the graph. 1 min 2 min 10 min 1 h 12 h 24 h Automatic

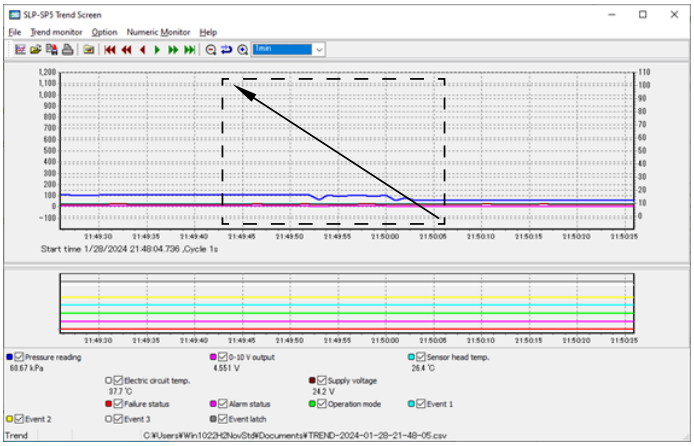
• Zooming the graph

While holding down the left mouse button, drag the cursor from upper left to lower right.



• Canceling the zoomed graph

While holding down the left mouse button, drag from lower right to upper left.



● How to operate the trend monitor

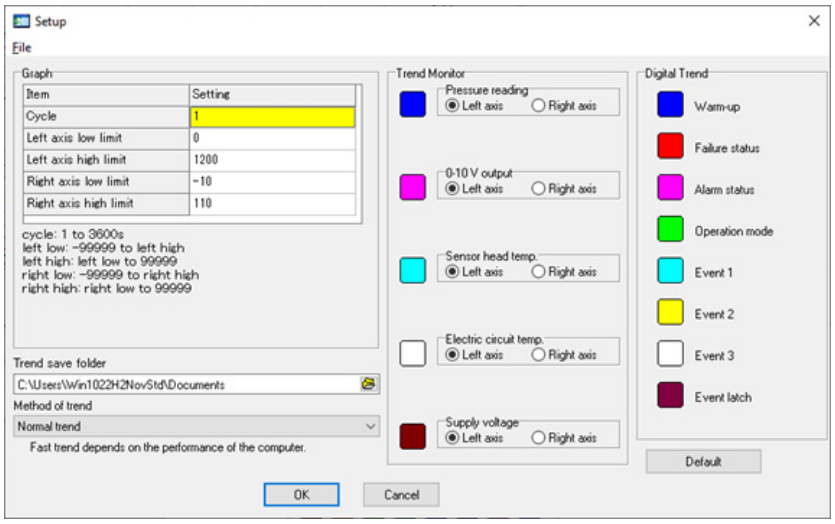
• Select [Data Display Screen (numeric monitor)] pulldown menu → [Trend monitor].

>> The Trend monitor screen appears.

• Click the  icon.

Selecting [Option] → [Set up] from the pull-down menu gives the same result.

>> The trend monitor setup screen appears.



Configure the following settings.

• Graph setup

Setting Item	Description	Setting Range	Default setting
Cycle	Sets the collection cycle.	1 to 3600 s	1
Left axis low limit	Sets the low limit of the vertical axis in the screen	-99999 to the high limit	0
Left axis high limit	Sets the high limit of the vertical axis in the screen.	The low limit to 99999	1200
Right axis low limit	Sets the low limit of the vertical axis in the screen.	-99999 to the high limit	-10
Right axis high limit	Sets the high limit of the vertical axis in the screen.	The low limit to 99999	110

• Trend save folder

Click the  icon to specify the folder to store the data in.

A file with a file name in the TREND-YYYY-MM-DD-HH-MM-SS.CSV format is automatically created and stored in the trend storage folder.

• Trend method

Select one of the following.

Trend method	Description
Normal trend	Executes measurement according to the cycle set for the graph.
Fast trend (Only pressure reading)	Execute measurement at the highest transmission speed

Note Fast trend reads pressure only.

Handling Precautions

- To use fast trend, stop the numeric monitor in advance as follows.

· Click the icon on the [Data Display Screen (numeric monitor)] to stop communication with the numeric monitor.

· Or select [File] → [Communication Start/Stop] from the menu.

· The communication status (enabled or disabled) is displayed at the lower left of the [Data Display Screen (numeric monitor)] screen.

• Selection of axis and color

Select the desired colors and axes for the measurement values.

Selecting [Default] returns the color to the default setting.

• Digital trend

Select the desired colors for the measurement values.

Selecting [Default] returns the color to the default setting.

• Starting data collection

When setup is complete, start the trend monitor.

Click the icon.

Selecting [Trend Monitor] → [Trend Monitor Start] gives the same result. Data collection will start, and the trend of the specified parameter will be displayed on the screen.

· Once the trend monitor starts, it will continue to work until it is stopped or data collection reaches 60000 cycles.

· If the number of collection times exceeds the limit, new data is automatically stored in the next file.

· While the trend monitor is running, the numeric monitor screen can be displayed, but it is not possible to quit the loader or show the setup screen. To exit the loader or display the setup screen, stop the trend monitor first.

• Stopping data collection
Select [Trend Monitor] → [Trend Monitor Stop].
The trend monitor stops.

• Saving collected data
Data collected by the trend monitor can be saved in the CSV file format.
Collected data in the CSV format can be handled by spreadsheet software such as Microsoft Excel.

Handling Precautions

- If the measured pressure exceeds the range, the value recorded is 120 % of full scale.
- Files are automatically saved while the trend monitor is running.
- Saved data files remain on the screen or in the PC unless they are initialized. However, because they cannot be opened on the loader screen, use the spreadsheet software to open them.
- Digital data graphs cannot be zoomed in or zoomed out.

• Copying a graph to the clipboard
The trend monitor screen can be copied and saved to the clipboard. Digital data graphs cannot be saved to the clipboard.

Chapter 4. TROUBLESHOOTING

4 - 1 Error messages

■ Startup error message

Category	Message	Description	Remedy
Loader system error	Can't start up two or more SLP-SP5s at once.	Startup of three or more instances of the loader program at the same time was attempted.	After clicking the [OK] button, exit all loaders except one.

■ Communication error messages

Category	Message	Description	Remedy
Communication error	Timed out.	· No signal was received within the required time. · A device other than the SPG is connected. · The SPG unit is not connected.	Check the cable connection and contacts. Connect the cable to the SPG.
	Cannot open communications port.	The communication port could not be opened.	Do not use the loader simultaneously with other software that uses the communication port.
	Communications error has occurred.	A system error occurred.	Restart the loader, or exit the loader and reboot Windows.
	Trend monitor is active.	The monitor screen cannot be closed while the trend monitor is running.	After the trend monitor is stopped, exit the monitor screen.
SPG status error	Cannot support currently connected SPG.	The loader version is not compatible with the SPG.	Contact Azbil Corporation or a sales representative.

■ File error messages

Category	Message	Description	Remedy
File name error	This file name is not valid.	An invalid file name was entered.	Enter a correct file name.
	This file cannot be found. Make sure that the correct path and filename are given.	The file name entered does not exist.	Enter an existing file name.
	This filename is a reserved device name. Use a different filename.	A file name reserved for a device name was entered.	Enter a correct file name.
Disk error	Not enough free space on disk.	Insufficient disk space.	Install a new disk.
	The device is not ready.	The disk drive is not ready.	Make sure the disk is ready and try again.
	Cannot make file.	The storage destination is a CD-ROM.	Store the file in another location.
	File name too long.	The file name is too long.	Shorten the file name to 255 characters or less.
Path name error	The path does not exist. Make sure that the correct path is given.	An incorrect path name was entered.	Enter the correct path name and try again.
File information error	Illegal file size.	The file is corrupted.	A corrupted file cannot be used. Try creating the file again.
	Illegal file information.		

4 - 2 Other Troubleshooting

Problem	Description	Remedy
A numeric value is not correctly displayed.	If the decimal point character is set to something other than "." (period), the loader does not operate normally.	Check that the decimal point character is set to " . " (period) . If not, set it to " . " (period).
The program cannot be exited.	The program does not respond and cannot be exited.	Forcibly exit the program using the Windows task manager. The PC may end up in this condition after it enters Standby, Suspend, Hibernate, or Sleep mode online. During communication, be sure to keep the PC running.
A shortcut is not created in the Start menu.	Even though the program is installed, there is no shortcut on the Start menu program list.	Uninstall the program, and if a shortcut is left on the desktop, or if a shortcut is pinned to the taskbar or Start menu, delete them. After that, reinstall the program.

Revision History of CP-UM-5499E

Date	Rev.	Revised pages	Description
June 2013	**1**		
June 2015	**2**	1, 2, 8, 13 to 15 16, 18 42 31 End of the manual	Windows 8.1 was added to the OS list. The SLP starts and the menu window image was changed. The setup window image was changed. "• Mpa" was added. AAS-511A-014-05
July 2015	**3**	iii	CP-UM-5671E, CP-SP-1351E, CP-SP-1353E were deleted. CP-SP-1400E was added.
Feb. 2016	**4**	ii End of the manual	Explanation about software license agreement was added. AAS-511A-014-06
Apr. 2019	**5**	1 2 8 9 9 to 12 13 16 46 End of the manual	Windows version was changed to Windows 7/10. The table of Hardware and the Note were changed. The handling precautions was changed. The windows image was changed and the handling precautions was added. Explanation of old 9, 10 pages description changed from (2) to (5) to (2) to (8). "2. Insert the USB loader cable into the USB port" and "3. Install the device driver" of the old page 11-13 were deleted. The description of Uninstalling the device driver has been changed. The checking the communication port number was added. One item of the other troubleshooting was added. AAS-511A-014-10
Mar. 2024	**6**	---	Compatible with discarded parts of USB loader cables. Changed the provision of SLP-SP5 from a paid CD-ROM to a free download on a web page.

Terms and Conditions

We would like to express our appreciation for your purchase and use of Azbil Corporation's products.

You are required to acknowledge and agree upon the following terms and conditions for your purchase of Azbil Corporation's products (system products, field instruments, control valves, and control products), unless otherwise stated in any separate document, including, without limitation, estimation sheets, written agreements, catalogs, specifications and instruction manuals.

1. Warranty period and warranty scope

   1.1 Warranty period

   Azbil Corporation's products shall be warranted for one (1) year from the date of your purchase of the said products or the delivery of the said products to a place designated by you.

   1.2 Warranty scope

   In the event that Azbil Corporation's product has any failure attributable to azbil during the aforementioned warranty period, Azbil Corporation shall, without charge, deliver a replacement for the said product to the place where you purchased, or repair the said product and deliver it to the aforementioned place. Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:

   (1) Failure caused by your improper use of azbil product (noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);
   (2) Failure caused for other reasons than Azbil Corporation's product;
   (3) Failure caused by any modification or repair made by any person other than Azbil Corporation or Azbil Corporation's subcontractors;
   (4) Failure caused by your use of Azbil Corporation's product in a manner not conforming to the intended usage of that product;
   (5) Failure that the state-of-the-art at the time of Azbil Corporation's shipment did not allow Azbil Corporation to predict; or
   (6) Failure that arose from any reason not attributable to Azbil Corporation, including, without limitation, acts of God, disasters, and actions taken by a third party.

   Please note that the term "warranty" as used herein refers to equipment-only-warranty, and Azbil Corporation shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Azbil Corporation's products.

2. Ascertainment of suitability

   You are required to ascertain the suitability of Azbil Corporation's product in case of your use of the same with your machinery, equipment, etc. (hereinafter referred to as "Equipment") on your own responsibility, taking the following matters into consideration:

   (1) Regulations and standards or laws that your Equipment is to comply with.
   (2) Examples of application described in any documents provided by Azbil Corporation are for your reference purpose only, and you are required to check the functions and safety of your Equipment prior to your use.
   (3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use
   Although azbil is constantly making efforts to improve the quality and reliability of Azbil Corporation's products, there exists a possibility that parts and machinery may break down. You are required to provide your Equipment with safety design such as fool-proof design,*1 and fail-safe design*2 (anti-flame propagation design, etc.), whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth. Furthermore, fault avoidance,*3 fault tolerance,*4 or the like should be incorporated so that the said Equipment can satisfy the level of reliability and safety required for your use.

   *1. A design that is safe even if the user makes an error.
   *2. A design that is safe even if the device fails.
   *3. Avoidance of device failure by using highly reliable components, etc.
   *4. The use of redundancy.

3. Precautions and restrictions on application

   3.1 Restrictions on application

   Please follow the table below for use in nuclear power or radiation-related equipment.

	Nuclear power quality*5 required	Nuclear power quality*5 not required
Within a radiation controlled area*6	Cannot be used (except for limit switches for nuclear power*7)	Cannot be used (except for limit switches for nuclear power*7)
Outside a radiation controlled area*6	Cannot be used (except for limit switches for nuclear power*7)	Can be used

   *5. Nuclear power quality: compliance with JEAG 4121 required
   *6. Radiation controlled area: an area governed by the requirements of article 3 of "Rules on the Prevention of Harm from Ionizing Radiation," article 2 2 4 of "Regulations on Installation and Operation of Nuclear Reactors for Practical Power Generation," article 4 of "Determining the Quantity, etc., of Radiation-Emitting Isotopes,"etc.
   *7. Limit switch for nuclear power: a limit switch designed, manufactured and sold according to IEEE 382 and JEAG 4121.

   Any Azbil Corporation's products shall not be used for/with medical equipment.

   The products are for industrial use. Do not allow general consumers to install or use any Azbil Corporation's product. However, azbil products can be incorporated into products used by general consumers. If you intend to use a product for that purpose, please contact one of our sales representatives.

   3.2 Precautions on application

   you are required to conduct a consultation with our sales representative and understand detail specifications, cautions for operation, and so forth by reference to catalogs, specifications, instruction manual, etc. in case that you intend to use azbil product for any purposes specified in (1) through (6) below. Moreover, you are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, fault avoidance, fault tolerance, and other kinds of protection/safety circuit design on your own responsibility to ensure reliability and safety, whereby preventing problems caused by failure or nonconformity.

(1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals
(2) For use of specific purposes, such as:
    * Nuclear energy/radiation related facilities
      [When used outside a radiation controlled area and where nuclear power quality is not required]
      [When the limit switch for nuclear power is used]
    * Machinery or equipment for space/sea bottom
    * Transportation equipment
      [Railway, aircraft, vessels, vehicle equipment, etc.]
    * Antidisaster/crime-prevention equipment
    * Burning appliances
    * Electrothermal equipment
    * Amusement facilities
    * Facilities/applications associated directly with billing
(3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability
(4) Facilities that are to comply with regulations of governmental/public agencies or specific industries
(5) Machinery or equipment that may affect human lives, human bodies or properties
(6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety

4. Precautions against long-term use

Use of Azbil Corporation's products, including switches, which contain electronic components, over a prolonged period may degrade insulation or increase contact-resistance and may result in heat generation or any other similar problem causing such product or switch to develop safety hazards such as smoking, ignition, and electrification. Although acceleration of the above situation varies depending on the conditions or environment of use of the products, you are required not to use any Azbil Corporation's products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.

5. Recommendation for renewal

Mechanical components, such as relays and switches, used for Azbil Corporation's products will reach the end of their life due to wear by repetitious open/close operations.

In addition, electronic components such as electrolytic capacitors will reach the end of their life due to aged deterioration based on the conditions or environment in which such electronic components are used. Although acceleration of the above situation varies depending on the conditions or environment of use, the number of open/close operations of relays, etc. as prescribed in specifications or instruction manuals, or depending on the design margin of your machine or equipment, you are required to renew any Azbil Corporation's products every 5 to 10 years unless otherwise specified in specifications or instruction manuals. System products, field instruments (sensors such as pressure/flow/level sensors, regulating valves, etc.) will reach the end of their life due to aged deterioration of parts. For those parts that will reach the end of their life due to aged deterioration, recommended replacement cycles are prescribed. You are required to replace parts based on such recommended replacement cycles.

6. Other precautions

Prior to your use of Azbil Corporation's products, you are required to understand and comply with specifications (e.g., conditions and environment of use), precautions, warnings/cautions/notices as set forth in the technical documents prepared for individual Azbil Corporation's products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.

7. Changes to specifications

Please note that the descriptions contained in any documents provided by azbil are subject to change without notice for improvement or for any other reason. For inquires or information on specifications as you may need to check, please contact our branch offices or sales offices, or your local sales agents.

8. Discontinuance of the supply of products/parts

Please note that the production of any Azbil Corporation's product may be discontinued without notice. After manufacturing is discontinued, we may not be able to provide replacement products even within the warranty period.

For repairable products, we will, in principle, undertake repairs for five (5) years after the discontinuance of those products. In some cases, however, we cannot undertake such repairs for reasons, such as the absence of repair parts. For system products, field instruments, we may not be able to undertake parts replacement for similar reasons.

9. Scope of services

Prices of Azbil Corporation's products do not include any charges for services such as engineer dispatch service. Accordingly, a separate fee will be charged in any of the following cases:

(1) Installation, adjustment, guidance, and attendance at a test run
(2) Maintenance, inspection, adjustment, and repair
(3) Technical guidance and technical education
(4) Special test or special inspection of a product under the conditions specified by you

Please note that we cannot provide any services as set forth above in a nuclear energy controlled area (radiation controlled area) or at a place where the level of exposure to radiation is equivalent to that in a nuclear energy controlled area.

azbil

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