

# **Simple Shutdown Software (Linux version)**

## **Instruction Manual**

Thank you for choosing our product.

This document describes the Installation Procedure, How to Use, Precautions for Correct Use and other essential information about Simple Shutdown Software (Linux version). Please read this before you start using the software.

Also, please read the instruction manual that comes with the main body of Uninterruptible Power Supply (UPS) before you start using this software.

### **Contents**

<b>The intended usages .....</b>	<b>- 1 -</b>
<b>Software License Terms .....</b>	<b>- 1 -</b>
<b>How to connect with the Uninterruptible Power Supply (UPS).....</b>	<b>- 3 -</b>
<b>Before installing the software.....</b>	<b>- 5 -</b>
<b>Installation of Simple Shutdown Software.....</b>	<b>- 6 -</b>
<b>Shutdown parameter setting.....</b>	<b>- 8 -</b>
<b>Startup and stop of the agent .....</b>	<b>- 11 -</b>
<b>Shutdown sequence .....</b>	<b>- 12 -</b>
<b>Uninstallation of Simple Shutdown Software .....</b>	<b>- 12 -</b>
<b>For use on a distribution other than Red Hat Enterprise Linux and CentOS-</b>	<b>13 -</b>
<b>Compiling the source files .....</b>	<b>- 14 -</b>
<b>Scheduled operation .....</b>	<b>- 16 -</b>
<b>Helpful tips .....</b>	<b>- 17 -</b>

## **The intended usages**

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

## **Software License Terms**

### **1.WARRANTY**

- (1) The warranty period for the Software is one year from the date of purchase, unless otherwise specifically agreed.
- (2) If the User discovers defect of the Software (substantial non-conformity with the manual), and return it to OMRON within the above warranty period, OMRON will replace the Software without charge by offering media or download from OMRON's website. And if the User discovers defect of media which is attributable to OMRON and return it to OMRON within the above warranty period, OMRON will replace defective media without charge. If OMRON is unable to replace defective media or correct the Software, the liability of OMRON and the User's remedy shall be limited to the refund of the license fee paid to OMRON for the Software.

## 2. LIMITATION OF LIABILITY

- (1) THE ABOVE WARRANTY SHALL CONSTITUTE THE USER'S SOLE AND EXCLUSIVE REMEDIES AGAINST OMRON AND THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. IN NO EVENT, OMRON WILL BE LIABLE FOR ANY LOST PROFITS OR OTHER INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF USE OF THE SOFTWARE.
- (2) OMRON SHALL HAVE NO LIABILITY FOR DEFECT OF THE SOFTWARE BASED ON MODIFICATION OR ALTERATION TO THE SOFTWARE BY THE USER OR ANY THIRD PARTY.
- (3) OMRON SHALL HAVE NO LIABILITY FOR SOFTWARE DEVELOPED BY THE USER OR ANY THIRD PARTY BASED ON THE SOFTWARE OR ANY CONSEQUENCE THEREOF.

## 3. APPLICABLE CONDITIONS

USER SHALL NOT USE THE SOFTWARE FOR THE PURPOSE THAT IS NOT PROVIDED IN THE ATTACHED USER MANUAL.

## 4. CHANGE IN SPECIFICATION

The software specifications and accessories may be changed at any time based on improvements and other reasons.

## 5. ERRORS AND OMISSIONS

The information in this manual has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

- Linux is a registered trademark of Linus Torvalds.
- Other company names and product names described in this manual are the trademarks or registered trademarks belong to their respective owners.

**©OMRON Corporation. 2015 - 2018 All Rights Reserved.**

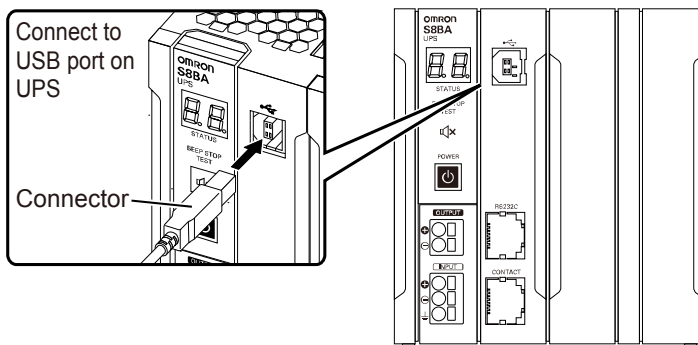
## How to connect with the Uninterruptible Power Supply (UPS)

This document describes how to connect the Uninterruptible Power Supply (UPS) S8BA series to your PC. Connect the PC and Uninterruptible Power Supply (UPS) according to the following procedure.

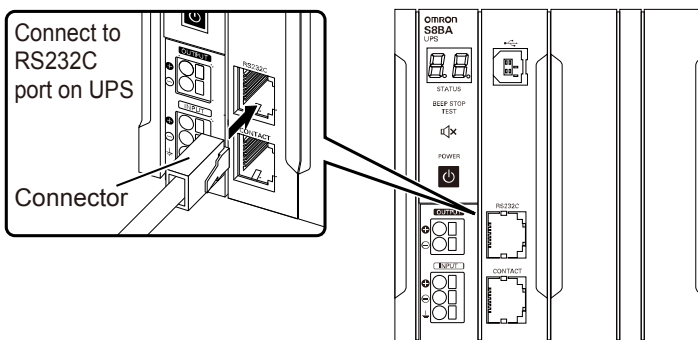
### 1. Connect the UPS to your computer.

- USB connection: The USB cable that comes with the UPS can be used.
- RS232C connection: An optional communication cable (S8BW-C01) is required.

#### ● USB connection

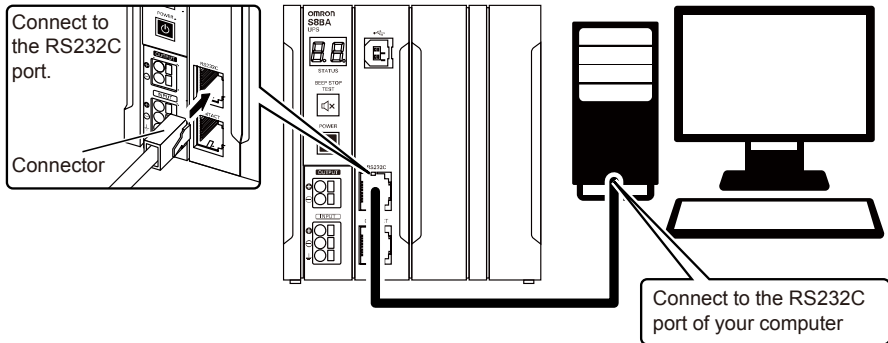


#### ● RS232C connection



Connection example: S8BA-24D24D120LF

2. When you are done connecting the UPS to the PC, install this software.



### [Caution when connecting the cable]

- For a cable to connect the USB port of the UPS to the USB port of the PC, use the USB cable that comes with the UPS.  
For a cable connect the RS-232C port of the UPS to the serial port of the PC, use an optional communication cable (S8BW-C01).
- There is some PC model with two serial ports and the BIOS setting related to its Serial 2 (Serial B) set to "Disable." Therefore, change the setting to "Enable" when using Serial 2 (Serial B) in such a model. How to check and change the BIOS settings depends on the PC you use. For details, please refer to the PC's instruction manual, or contact PC manufacturer's support center.

#### <<Notice>>

- When "Automatically stop UPS after OS shutdown" is set, if power is restored during execution of the automatic shutdown process, a power failure occurs. And, even if power is restored during execution of the automatic shutdown process, the output of the UPS stops temporarily after the set time elapses. In such a case, do not turn the power of the PC ON until the restart of the UPS due to power restoration is completed.
- If you are considering a system that automatically starts up the PC after the input power supply is restored, select a PC designed in such a way that its power supply is turned on when the input power is provided, without pressing the power switch. For the PC operation when the input power is supplied, please refer to the PC's instruction manual, or contact PC manufacturer's support center.

## Before installing the software

This chapter explains the matters necessary to know before installing the software.

### [Precaution during installation]

- Start installing the software after checking that the OS can be normally terminated in your computer environment. Note that even if this software is installed in an environment where OS cannot be normally terminated, the shutdown operation cannot be performed correctly by using it.
- When using other automatic shutdown software, make sure to uninstall that software first, restart the OS and then install this software. Refer to the instruction manual of each software for how to uninstall.
- Read "How to Connect with Uninterruptible Power Supply (UPS)," make the connection and then install this software.
- This software is used only for Omron's Uninterruptible Power Supply (UPS). Refer to the "operation environment" for the target models of Uninterruptible Power Supply (UPS). For the latest information, visit our Website.

## Installation of Simple Shutdown Software

### 1. Operation environment

Check the operation environment before installation.

Supported PCs	DOS/V PC	
Verified OS and platform	Red Hat Enterprise Linux 7.3 / 7.2 / 7.1 / 7.0 CentOS 7.3 / 7.2 / 7.1 / 7.0	x86,AMD64,EM64T
RAM	64MB or more	
Hard disk capacity	80MB or more	
Interface	RS-232C/USB	
Uninterruptible Power Supply (UPS)	S8BA-24D24D120LF / S8BA-24D24D240LF S8BA-24D24D360LF / S8BA-24D24D480LF S8BA-24D24D480SBF / S8BA-24D24D960SBF	

## 2. Installation procedure

### <Precaution>

- Install the shutdown software by logging in with the user name having the root authority.
- Two separate versions are provided: 32bit version and 64bit version. Use the version that suits your environment.

- (1) Unzip the downloaded file.  
The files necessary for installation are stored in the "Release" directory.
- (2) Change the access permission for files and folders under the "Release" directory to Full Access Permission.  
Command: `chmod -R 777 Release`
- (3) Move to the "Release" directory.  
Command: `cd Release`
- (4) Execute the following command to install the software.  
Command: `./install.sh`
- (5) "Software License Agreement" appears.  
When "Do you agree this license?" appears last, type "y" if you agree, and otherwise, type "N".  
If you type "N", the installation process does not start.
- (6) When the installation process is executed, the message below will appear and the installation process will become complete.  
Simple Shutdown Daemon program has been installed completely.  
Please run below command and setup the parameters of Simple Shutdown Daemon to meet your system.  
Command: `/usr/lib/ssd/master/config.sh`

According to the content of the message, set the shutdown parameters.

## Shutdown parameter setting

Set the shutdown parameters of the PC connected to Uninterruptible Power Supply (UPS.)

### [Procedure]

1. Enter the following command to start setting parameters.  
`/usr/lib/ssd/master/config.sh`

2. Set the shutdown parameters.

The setting screen and display details are as follows:

- (1) Specifying the communication port

Select the port that is connected to the Uninterruptible Power Supply (UPS) automatically or manually.

```
1. Port Selection Mode:
  1. Auto Mode(Select all COM and USB device)
  2. Semiautomatic Mode(Only select all USB device)
  3. Manual Mode(Only select pointed COM port)
  (Default Mode is "Auto Mode(Select all COM and USB device)")
  Select Number:
```

- (2) Selecting a USB communication mode

Select the mode to use for USB communication between Libusb and HID.  
However, if you are using battery integrated UPS (S8BA-LF), please select HID because you may not be able to communicate with Libusb.

```
2. Select USB communication mode
  1. Libusb 2. HID
  (Default Mode is "Libusb")
  Select Number:
```

- (3) Delay time

Set the delay time from when an abnormality occurs in the power supply until shutdown operation starts.

```
3. AC fail delay time
  (Default value is 60 Sec)
  [Information]
  * When UPS detects "AC fail" condition doesn't start shutdown action
    until pass this delay time.
  * The range of AC fail delay time is from 0 Sec to 36000 Sec.
  * The step between "0 Sec to 36000 Sec" is "1 Sec".
  AC fail delay time(Sec):
```

#### (4) External command line

4. External Command Line  
[Information]  
\* After the AC fail delay time this External Command line will be execute  
\* Please setup an External Command  
External Command Line:

#### (5) External command needs time

5. External Command needs time  
(Default value is 0 Sec)  
[Information]  
\* Please setup an External Command needs time from External Command start to External Command finish.  
\* The range of External Command need time is from 0 Sec to 600 Sec.  
\* The step between "0 Sec to 600 Sec" is "60 Sec".  
\* If you use External Command for Virtual Server shutdown,  
please setup External Command needs time for Guest OS shutdown.  
External Command needs time (Sec):

#### (6) OS shutdown need time

Set the time necessary for shutting down the OS.

6. OS shutdown need time  
(Default value is 180 Sec)  
[Information]  
\* Please setup an OS shutdown needs time from OS shutdown start to OS shutdown finish.  
\* The range of OS Shutdown need time is from 0 Sec to 600 Sec.  
\* The step between "0 Sec to 600 Sec" is "60 Sec".  
OS shutdown needs time (Sec):

#### (7) Send Message

Select whether to display a warning message when an event occurs.

7. Send Message to login users  
1. Disable 2. Enable  
(Default Value is "Disable")  
Select Number:

#### (8) System closing mode

Select how to exit between Shutdown and Hibernate.

8. System closing mode  
1. Shutdown 2. Hibernate  
(Default Mode is "Shutdown")  
Select Number:

\* If the installation environment is not a virtual environment using KVM, the setting procedure ends in (8). When the setting operation in (8) is performed, the List screen for the entered details appears.

(9) Virtual Server shutdown mode

Select which to use for exiting between the settings of the system and the settings of this software.

```
9. Virtual Server shutdown mode
  1. Shutdown by Linux system 2. Shutdown by Simple Shutdown
  (Default Mode is "Shutdown by Linux system")
  Select Number:
```

\* If 1.Shutdown by Linux system is selected in (9), the setting procedure ends in (9).  
In this case, the guest OS is exited according to the settings of the Linux system.  
When the setting operation in (9) is performed, the List screen for the entered details appears.

(10) Guest OS shutdown mode

Select how to exit the guest OS.

```
10. Guest OS shutdown mode:
  1. Shutdown 2. Suspend
  (Default Mode is "Shutdown")
  Select Number:
```

3. When the shutdown parameters are all set, the List screen for the entered details appears. Check the entered details. If no correction is required, enter '1'.  
If you start again from the beginning by deleting the entered details, enter '2'.

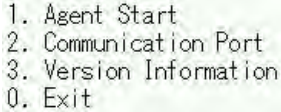
```
*****
[Reconfirm shutdown parameter of the PE1850-localhost.localdomain (Master Agent)].
*****
1. Port Selection Mode:      Auto Mode(Select all COM and USB device)
2. Select USB communication mode : Libusb
3. AC fail Delay time (Sec): 60
4. External Command Line:
5. External Command needs time (Sec): 60
6. OS Shutdown needs time (Sec): 120
7. Send Message to login users: Enable
8. System closing mode : Shutdown
9. Virtual Server shutdown mode : Shutdown by Simple Shutdown
10. Guest OS shutdown mode : Shutdown
*****
1.OK 2.Cancel
Select Number:
```

When the setting operation is completed, the simple shutdown daemon (hereinafter called as the "Agent") starts up.

## Startup and stop of the agent

This section explains how to startup and stop the Agent.

### [Procedure]

1. Enter the following command:  
`/usr/lib/ssd/master/AgentManager`
2. When the screen below appears, stop or start the Agent and select "0. Exit" to close the menu.  


### <Precaution>

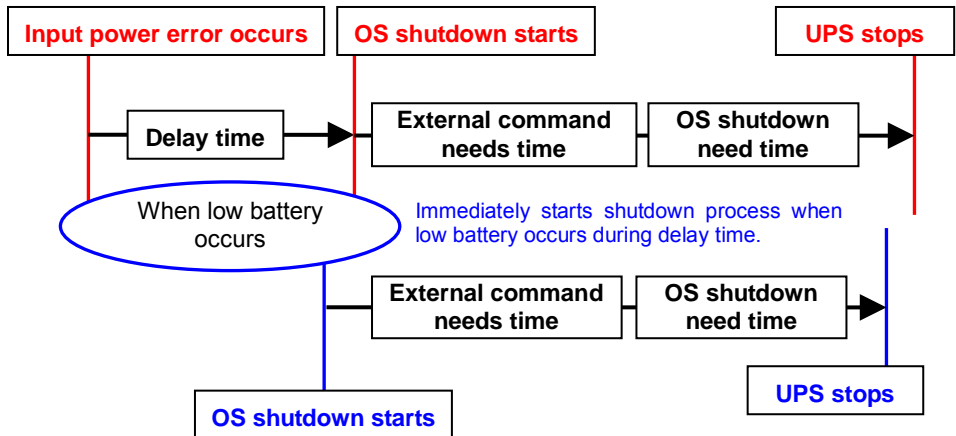
Execute Config.sh when the agent is suspended. (The agent is suspended immediately after the installation process is completed.)

### <Additional notes>

#### [1. Agent Stop/Start]

Startup or stop of the master agent is possible. "Stop" and "Start" appears alternately each time a choice is made.

## Shutdown sequence



## Uninstallation of Simple Shutdown Software

### [Procedure]

- (1) Move to the directory where the shutdown software was unzipped.  
Command: `cd /*/Release` (\* is the name of the unzip destination directory)

### <Precaution>

Uninstall the shutdown software by logging in with the user name having the root authority.

- (2) Execute the following command to uninstall the software.  
Command: `./uninstall.sh`
- (3) Restart the OS when the uninstallation process is completed.

<p style="text-align: center;"><b>For use on a distribution other than Red Hat Enterprise Linux and CentOS</b></p>
--

1. Compile the source files (\*1), create the execution files, "AgentManager", "Config.sh", "omronctl", "ssdService", and "ssdDaemon", and place them under the "/Release/master" directory.  
Modify the source, if necessary.
2. Place the "install.sh" file into the "/Release" directory and execute install.sh.  
Command: ./install.sh

\*1: Refer to "Compiling the source files" in the next section.

## Compiling the source files

The source files for Simple Shutdown Software (Linux version) are stored in the "/Source" directory as follows:



The directories "AgentManager", "Config", "omronctl", "ServiceKernel", and "ShutdownSoftware" store source files and "Makefile".

These source files and "Makefile" correspond to the execution files for AgentManager, Config.sh, omronctl, ssdService, and ssdDaemon.

### [Compile]

- **AgentManager: Program for starting up/stopping the Agent**  
Execute the "make" command in the "/Source/AgentManager" directory. (\*2)  
*AgentManager* is created in "/Release/master".
- **Config.sh: Program for setting the shutdown operation**  
Execute the "make" command in the "/Source/Config" directory. (\*2)  
*Config.sh* is created in "/Release/master".
- **omronctl: Program for setting the schedule**  
Execute the "make" command in the "/Source/omronctl" directory. (\*2)  
*omronctl* is created in "/Release/master".
- **ssdService: Program for executing the SimpleShutdownSoftware service**  
Execute the "make" command in the "/Source/ServiceKernel" directory. (\*2)  
*ssdService* is created in "/Release/master".

- ***ssdDaemon: Main program for executing such operation as shutdown***  
Execute the "make" command in the "/Source/ShutdoenSoftware" directory. (\*2)  
ssdDaemon is created in "/Release/master".
  - ***All modules (AgentManager, Config.sh, omronctl, ssdService, ssdDaemon)***  
Execute the "make" command in the "/Source" directory. (\*2)  
AgentManager, Config.sh, omronctl, ssdService, and ssdDaemon are  
generated together in "/Release/master".
- \*2: To execute the "make" command, the gcc package is needed.  
Install the gcc package from the OS CD-ROM.

## Scheduled operation

By executing "omronctl" contained in the /usr/lib/ssd/master/ directory, you can perform scheduled operation in conjunction with the UPS.

Note that you cannot execute omronctl if the Agent of Simple Shutdown Software is not running.

Command:	Function
omronctl	Shut down the OS and the UPS. To restart the UPS, turn on the power switch on the UPS unit.
omronctl -O YYYY/MM/DD.hh:mm	Restart the UPS at the specified time after shutting down the OS and the UPS.
omronctl /f/r	Restart the system.

When omronctl is executed from another application, if the execution result turns out to be an error, returns one of the following error codes to the application that executed omronctl.

Error code	Description	Correction
501	The Agent of Simple Shutdown Software is stopped.	Start up the Agent of Simple Shutdown Software.
502	Cannot communicate with the UPS.	Check that the UPS and the computer are connected to each other correctly with the communication cable.
503	The command is executed twice.	Wait until the active command is completed.
504	The set parameter is not correct.	Set a correct parameter.
505	The scheduled operation cannot be performed because the time for turning the power ON is set earlier than the time the UPS stops.	Set the power-ON time later than the time the UPS stops.

## Helpful tips

- I would like to know whether Simple Shutdown Software is running.

**Answer:**

Enter the "ps -e | more" command: If "ssdService, ssdDaemon" is displayed in the list, the shutdown software is running.

- I would like to know what kinds of files "Shutdown.cfg" and "S99SimpleShutdoenDaemon" are.

**Answer:**

Shutdown.cfg: A file in which the shutdown parameters are recorded.

S99SimpleShutdoenDaemon: A file for automatically starting "ssdService" at OS startup.

- Unauthorized copying of some or all of the contents of this document is prohibited.
- The contents of this document may change in the future, without prior notice.

**OMRON Corporation**

Rev. K1L-D-15038E