OMRON

# Switch Mode Power Supplies

## S8VK-X

Expanding Network Connectivity;

## IoT Production Site Innovation

# Production Site Innovation inspired by IoT

The production site of the future that OMRON aims to create is one where the health status of its facilities, invisible today, becomes visible.

- Conditions are visible, anytime, anywhere.
- Information is displayed collectively by equipment/site.
- Past data is retrievable.

Facility conditions will be visualized by IoT and seamlessly connected to other sites all over the world. Facility operating rate will be systematically maintained; the way of working will be dramatically changed.

# A new style of facility maintenance brought

Visualizing and centrally controlling the condition of power supplies enables you to systematize equipment maintenance before equipment trouble occurs, eliminating unexpected response and unnecessary premature replacement, and thus reducing the overall maintenance cost.

# about by the visualization of power supplies

From now on

## Centralized monitoring of equipment conditions

The voltage, current, and replacement time of power supplies are centrally monitored by line or site.

## Improved accuracy of maintenance planning

Statistical use of past data enables you to identify the appropriate schedule and method for maintenance.



## Enhanced facility operating rate and optimized maintenance cost

Improved accuracy of maintenance planning prevents unexpected equipment shutdown, achieves maintenance at the most appropriate schedule and cost, and thus optimizes the maintenance cost.

# The first step in scheduled maintenance: visualization of the time to replace power supplies.

S8VK-X calculates the deterioration of the internal electrolytic capacitor based on its component's temperature. It is indicated on the display as well as via the communications system.

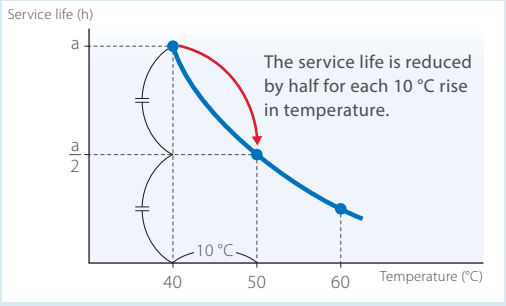
**Years until replacement**


**Percentage until replacement**


Do you know?

## A power supply has a service life.

In general, aged deterioration of the internal electrolytic capacitor degrades the original performance (service life) of a power supply and ceases to function in the end. Using a power supply close to its service life may cause a disruption of output voltage even at power-on state and unexpected shutdown of equipment.



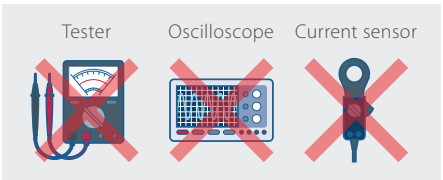

**Relationship between service life of a electrolytic capacitor and temperature**

## Furthermore, voltage, current and maximum current can be displayed; More and more useful in various applications.

### Advantages during design and measurement

You can easily check the expected output voltage and the designed current (steady-state and maximum) without using measuring equipment.

Display example


### Advantages during operation

You can check the output voltage and current of power supplies on site without using a tester.
You can also check the maximum current value.

**Voltage**


**Current**


**Maximum current** (Peak hold current)


### Advantages during malfunction and maintenance

You can report and give commands, while checking the output voltage and current by operating the monitor without using a tester.

# Why don't you change your power supply to S8VK-X to achieve a new style of facility maintenance?

S8VS 240-W models


## World's smallest class*1 of power supplies with a communication function

The space-saving design enables you to mount side-by-side and replace conventional power supplies in a control panel smoothly.

*1. According to OMRON investigation in October 2017.

Switch Mode Power Supplies

**S8VK-X**

*2. Two units of S8VK-X 240 W and W4S1-03B Switching Hub

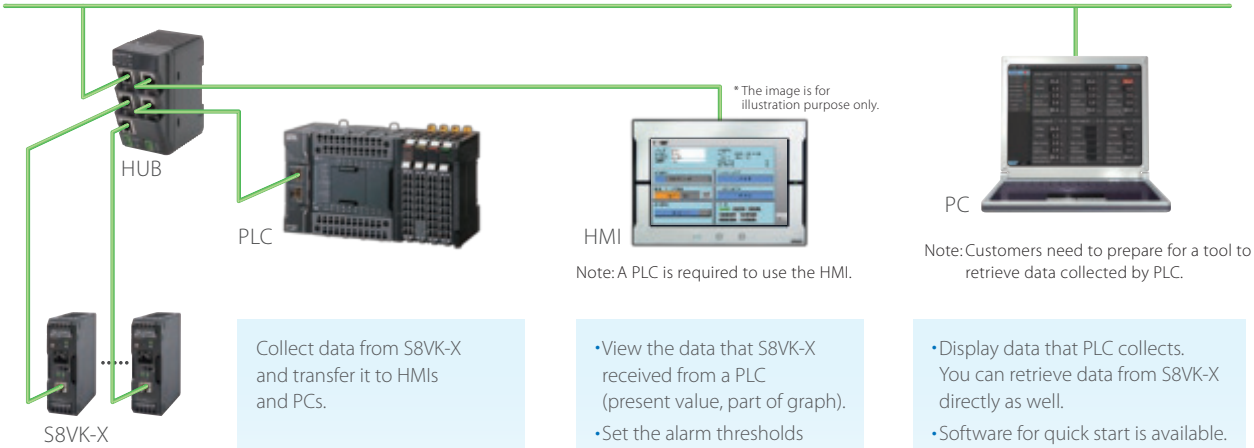
## Excellent environmental resistance contributes to the stable operation of equipment

| Temperature | Vibration and shock | Humidity and gases | Altitude |
|---|---|---|---|
| -40 to 70 °C | Vibration: 5 G<br>Shock: 15 G | Coated PCBs | 3,000 m |

## Compatible with the communication methods used globally in a variety of applications

Compatible with EtherNet/IP / Modbus

System configuration example




Note: A PLC is required to use the HMI.

Note: Customers need to prepare for a tool to retrieve data collected by PLC.

Collect data from S8VK-X and transfer it to HMIs and PCs.

- View the data that S8VK-X received from a PLC (present value, part of graph).
- Set the alarm thresholds

- Display data that PLC collects. You can retrieve data from S8VK-X directly as well.
- Software for quick start is available.
- Save data
- Set the alarm thresholds

# Starting product monitoring is easy with the free "Power Supply Monitoring Tool" software

By using the Power Supply Monitoring Tool, it is possible to start monitoring by simply connecting the S8VK-X to a personal computer via an Ethernet cable. In addition to collectively displaying and saving data and displaying graphs, it is also possible to check the status in real time on a derating chart and to simulate of capacity changes.

## What you can do with Power Supply Monitoring Tool

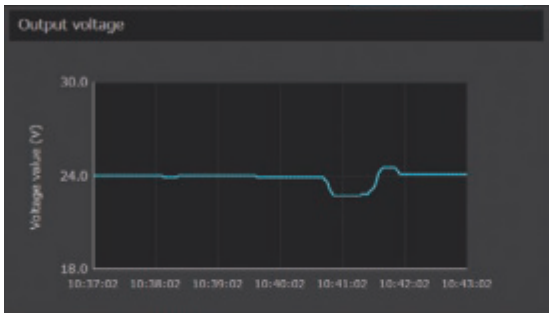
### Collective display of data, saving data, and the alarm display

It is possible to collectively monitor up to 18 power supplies in multiple locations in real time. It is also possible to conduct feedback on the status to take the appropriate action at the appropriate time and to improve the accuracy of maintenance plans.

## Voltage and current graph displays

Continuous data monitoring is possible without adding extra devices such as clamp meters and data loggers.

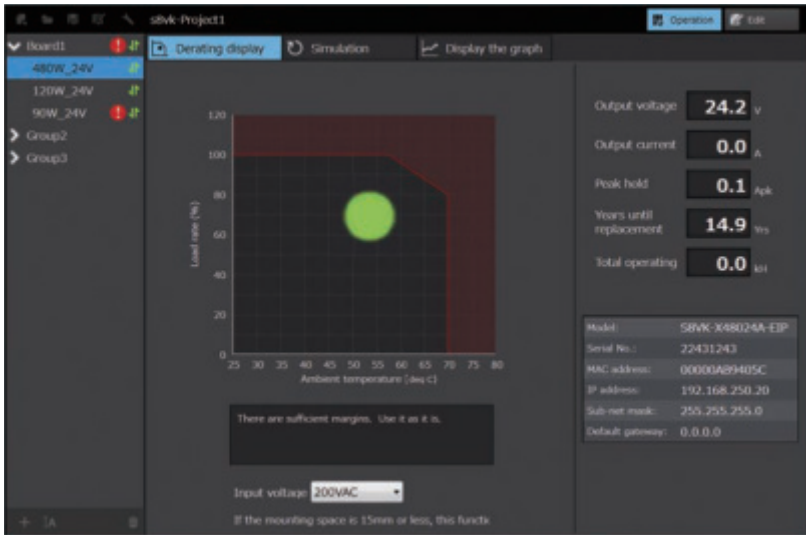
### Output voltage




### Output current/Maximum current


## World's first* Usage status check and simulations

*According to OMRON investigation as of March 2018.

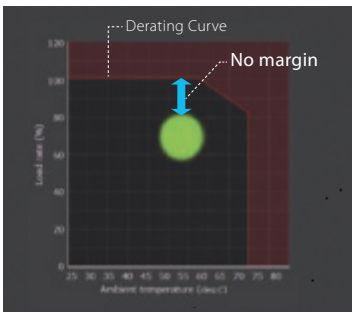



It is possible to check the status of power supply usage in real time on a derating chart and to identify risks.
Unexpected equipment shutdowns can be prevented by appropriate maintenance beforehand. This contributes to the realization of equipment that does not stop and improves facility operating rates.

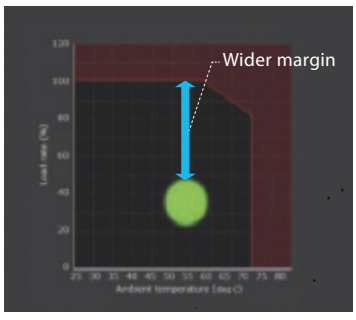
### Example use

- It is possible to simulate the margin that would be created if the product currently in use is replaced with a type with a larger capacity.
- It is possible to check how the margin (the existence of risk) on the power supply is affected by changes in the surrounding environment, such as between daytime and nighttime and in different seasons.

Using 120-W model




Replacement with 240-W model



# Communications and display items

| Item | | Monitor display | Communication | | |
|---|---|---|---|---|---|
| | | | EtherNet/IP™ | | Modbus TCP |
| | | | CIP message | Tag data link | |
| Output voltage | | ✓ | Read | Read | Read |
| Output current | | ✓ | Read | Read | Read |
| Output peak hold current | | ✓ | Read and write* | Read | Read and write* |
| Years until replacement<br>Percentage until replacement | | ✓ | Read | Read | Read |
| Total run time | | ✓ | Read | Read | Read |
| Continuous run time | | ✓ | Read | Read | Read |
| Self-diagnostics | Overheating alarm | ✓ | Read | Read | Read |
| | Measured value error | ✓ | Read | Read | Read |
| | Memory error | ✓ | Read | Read | Read |
| Product model | | — | Read | None | Read |
| Serial number | | — | Read | None | Read |
| Firmware version | | — | Read | None | Read |
| IP address<br>Subnet mask<br>Default gateway | | — | Read and write | None | Read and write |
| MAC address | | — | Read | None | Read |

* Pressing the reset key or communications writing (Ethernet/IP CIP message or Modbus/TCP) resets the value to 0.

# Operating Environment

| Item | Description |
|---|---|
| OS | Windows 7, 8.1 or 10 (32-bit or 64-bit) (Japanese or English) |
| CPU | 1 GHz or more, 32 bit or 64 bit processor |
| Memory | 1 GB or more, or 2 GB or more (64-bit) |
| Free disk space | 16 GB or more, or 20 GB or more (64-bit) |
| Monitor resolution | 1024 × 768 (XGA), High Color 16-bit or more |
| Others | LAN port: For network connection |

**OMRON Corporation** **Industrial Automation Company**
**Kyoto, JAPAN**
**Contact: www.ia.omron.com**

***Regional Headquarters***
**OMRON EUROPE B.V.**
Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

**OMRON ELECTRONICS LLC**
2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

**OMRON ASIA PACIFIC PTE. LTD.**
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

**OMRON (CHINA) CO., LTD.**
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

**Authorized Distributor:**



**CSM_1_3_1218**
**Cat. No. T211-E1-02** 0418(1117)