

## Switch Mode Power Supply S8VK-S Series

# 120 W

**A Perfect Fit for Small Control Panels  
Coated PCBs for Better Resistance  
to Environment  
Connections for Easy Wiring**



- Operation possible at ambient temperatures from -40 to 70°C.
- Side-by-side mounting possible (up to 55°C).
- Power Boost function at 120%.



Our shared Value Design for Panel (herein after referred to as Value Design) concept for the specifications of products used in control panels will create new value to our customer's control panels. Combining multiple products that share the Value Design concept will further increase the value provided to control panels.

## Specifications

### Ratings, Characteristics, and Functions

| Item  | Power rating                 |  | 120 W  |              |
|---|------------------------------|--|--|--------------|
|   | Output voltage               |  | 24 V   |              |
| Efficiency  | 115 VAC input *1             |  | 90% typ.   |              |
|   | 230 VAC input *1             |  | 92% typ.   |              |
| Input   | Voltage range *2             |  | Single-phase, 85 to 264 VAC, 90 to 350 VDC, 265 to 300 VAC (1 second)  |              |
|   | Frequency *2                 |  | 50/60 Hz (47 to 63 Hz)   |              |
|   | Input current                | 115 VAC input *1   |  | 1.2 A typ.   |
|   |                              | 230 VAC input *1   |  | 0.63 A typ.  |
|   | Power factor                 |  | 0.9 min.   |              |
|   | Leakage current *3           | 115 VAC input  |  | 0.5 mA max.  |
| 230 VAC input   |                              | 1 mA max.  |  |              |
| Inrush current (for a cold start at 25°C)   | 115 VAC input                |  | 16 A typ.  |              |
|   | 230 VAC input                |  | 32 A typ.  |              |
| Output  | Rated output current         |  | 5 A  |              |
|   | Rated output electric power  |  | 120 W  |              |
|   | Maximum boost current        |  | 6 A  |              |
|   | Voltage adjustment range *4  |  | 21.6 to 28 V (with V.ADJ)  |              |
|   | Start up time                | 115 VAC input *1   |  | 1000 ms max. |
|   |                              | 230 VAC input *1   |  | 1000 ms max. |
| Hold time *5  | 115 VAC input *1             |  | 45 ms typ.   |              |
|   | 230 VAC input *1             |  | 45 ms typ.   |              |
| Additional functions  | Overload protection          |  | Yes, automatic reset   |              |
|   | Overvoltage protection       |  | Yes, 130% or higher of rated output voltage, power shut off (shut off the input voltage and turn on the input again) |              |
|   | Output indicator             |  | Yes (LED: Green)   |              |
|   | Low-voltage detection output |  | No   |              |
| Insulation  | Withstand voltage            |  | 3.0 kVAC for 1 min. (between all input terminals and output terminals), current cutoff 10 mA                         |              |
|   |                              |  | 2.0 kVAC for 1 min. (between all input terminals and PE terminals), current cutoff 10 mA                             |              |
| 1.0 kVAC for 1 min. (between all output terminals and PE terminals), current cutoff 20 mA |                              |  |  |              |
| Insulation resistance   |                              | 100 MΩ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC |  |              |
| Environment   | Vibration resistance         |  | 10 to 55 Hz, maximum 5G, 0.42 mm half amplitude for 2 h each in X, Y, and Z directions                               |              |
|   | Shock resistance             |  | 150 m/s <sup>2</sup> , 3 times each in ±X, ±Y, ±Z directions   |              |
| Construction  | Weight                       |  | 400 g max.   |              |

\*1. The value is when both rated output voltage and rated output current are satisfied.

\*2. Do not use an inverter output for the product. Inverters with an output frequency of 50/60 Hz are available, but the rise in the internal temperature of the product may result in ignition or burning.

If the input is connected to a UPS, do not connect a UPS with a square-wave output.

Doing so will cause the internal temperature of the product to increase, possibly causing smoking or burning.

\*3. The value for the leakage current is determined according to the Electrical Appliances and Material Safety Act.

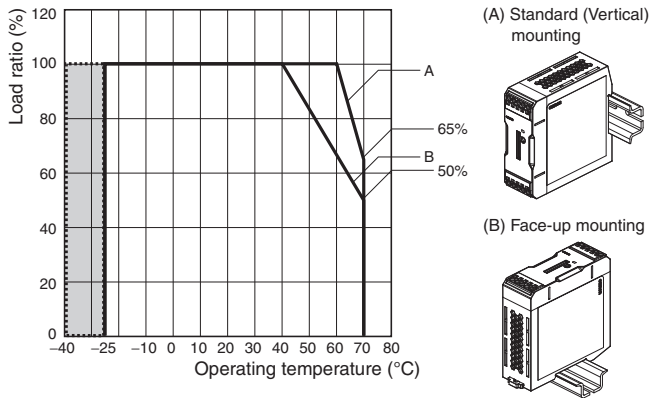
\*4. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than 28 V min of the voltage adjustment range. When adjusting the output voltage, confirm the actual output voltage from the product and be sure that the load is not damaged.

\*5. A characteristic when the ambient operating temperature of 25°C.

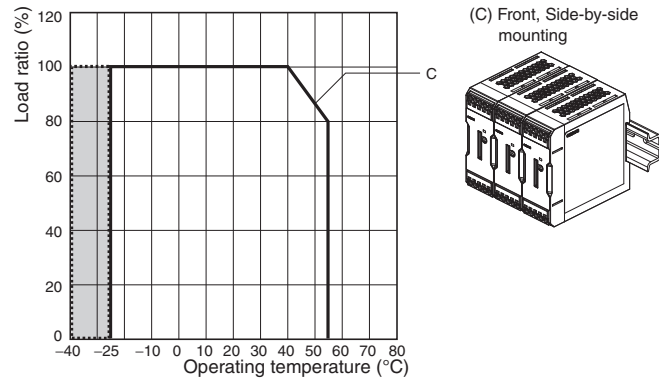
For details, refer to the website. (<http://www.ia.omron.com/>)

# Engineering Data

## 120 W (S8VK-S12024) Horizontal separation: 15 mm or more



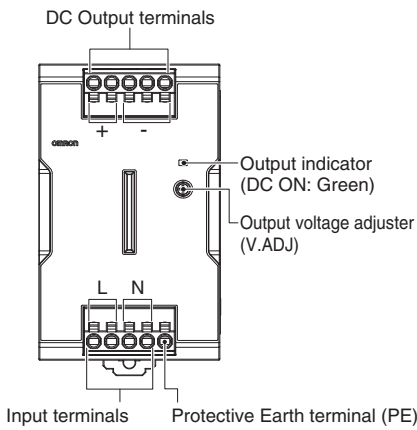
## 120 W (S8VK-S12024) Horizontal separation: Less than 15 mm



- Note: 1.** At less than 90 VAC, derate the load at 2.5%/V.  
**2.** For a DC input, reduce the load given in the above derating curve by multiplying by the following coefficients.  
 S8VK-S12024: 0.9  
**3.** In the shaded area, time is required to reach the rated output voltage after the input voltage is applied.

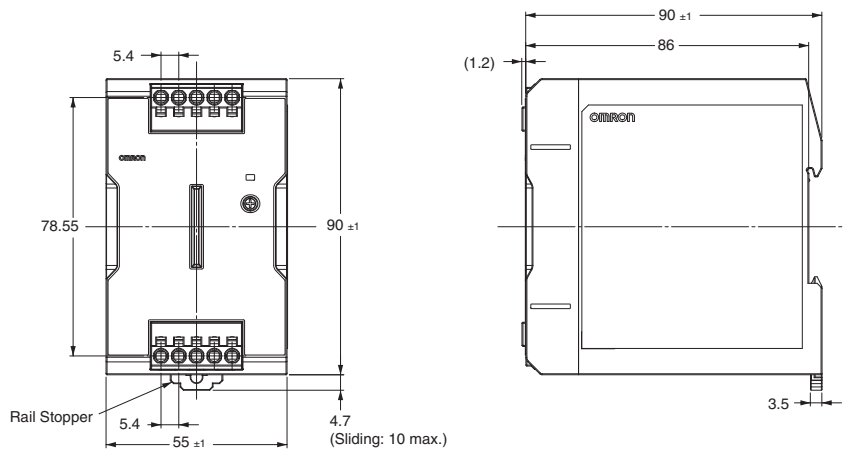
- Note: 1.** Apply the rated voltage  
**2.** In the shaded area, time is required to reach the rated output voltage after the input voltage is applied.

## Construction and Nomenclature



## Dimensions

(Unit: mm)



# S8VK-S12024

## Standards

|                                   |                            |   |
|-----------------------------------|----------------------------|---|
| <b>Harmonic current emissions</b> |                            | Conforms to EN 61000-3-2  |
| <b>EMI</b>                        | <b>Conducted Emissions</b> | Conforms to EN 61204-3 Class B, EN 55011 Class B  |
|                                   | <b>Radiated Emissions</b>  | Conforms to EN 61204-3 Class B, EN 55011 Class B  |
| <b>EMS</b>                        |                            | Conforms to EN 61204-3 high severity levels   |
| <b>Approved Standards</b>         |                            | UL Listing: UL 508<br>cUL: CSA C22.2 No107.1,<br>CSA C22.2 No213<br>UL UR: UL 60950-1 (Recognition) OVCII (≤ 3000 m) Pol2<br>cUR: CSA C22.2 No.60950-1 OVCII (≤ 3000 m) Pol2<br>EN: EN 50178 OVCIII (≤ 2000 m) OVCII (2000 m≤ and≤3000) Pol2,<br>EN 60950-1 OVCII (≤ 3000 m) Pol2 |
| <b>Conformed Standards</b>        |                            | PELV (EN/IEC 60204-1) *<br>EN/IEC 61558-2-16:2009+A1:2013 *   |
| <b>SEMI</b>                       |                            | Conforms to F47-0706 (200 to 240 VAC input)   |

\* Refer to *Standard Compliance*, below.

## Model Number Structure

S8VK- S          

1      2

### 1. Power Ratings

- 030: 30 W
- 060: 60 W
- 120: 120 W
- 240: 240 W
- 480: 480 W

### 2. Output voltage

- 24: 24 V

| Power ratings | Rated input voltage   | Rated output voltage | Rated output current | Maximum boost current | Model number |
|---------------|---|----------------------|----------------------|-----------------------|--------------|
| 30 W          | 100 to 240 VAC<br>(allowable range:<br>85 to 264 VAC or<br>90 to 350 VDC) | 24 V                 | 1.3 A                | 1.56 A                | S8VK-S03024  |
| 60 W          |   | 24 V                 | 2.5 A                | 3 A                   | S8VK-S06024  |
| 120 W         |   | 24 V                 | 5 A                  | 6 A                   | S8VK-S12024  |
| 240 W         |   | 24 V                 | 10 A                 | 15 A                  | S8VK-S24024  |
| 480 W         |   | 24 V                 | 20 A                 | 30 A                  | S8VK-S48024  |

## Safety Precautions

Be sure to read the precautions for all models in the website at: <http://www.ia.omron.com/>.

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