Switching Power Supply
S82K

DIN-Rail Mount Power Supply with a Wide Power Range of 3 to 240 W

- Universal input voltage range.
- All models are UL 508 listed.
- Class 2 approved on all models below 240 W, except dual-output types.
- Undervoltage indicators on all 90-W, 100-W and the 240-W “T” models have alarm and output indicators.
- PFC models meet EN61000-3-2 (limits for harmonic current emissions).
- Parallel operation capability (100 W and 240 W).
- Finger-safe terminal block with cover according to VDE0106/P100.
- Approvals: UL, CSA, VDE, and CE.
- 3-year warranty.

Ordering Information

■ SWITCHING POWER SUPPLIES

Stock Note: Shaded models are normally stocked.

Rated input voltage	Power ratings	Output voltage	Output current	Function configuration			Part number
				Output	Undervoltage alarm	PFC	
100 to 240 VAC	3 W	5 V	0.6 A	Single output	Indicator only	No	**S82K-00305**
		12 V	0.25 A				**S82K-00312**
		15 V	0.2 A				**S82K-00315**
		24 V	0.13 A				**S82K-00324**
	7.5 W	5 V	1.5 A				**S82K-00705**
		12 V	0.6 A				**S82K-00712**
		15 V	0.5 A				**S82K-00715**
		24 V	0.3 A				**S82K-00724**
		+12 V/–12 V	0.3 A/0.2 A	Dual output			**S82K-00727**
		+15 V/–15 V	0.2 A/0.2 A				**S82K-00728**
	15 W	5 V	2.5 A	Single output			**S82K-01505**
		12 V	1.2 A				**S82K-01512**
		24 V	0.6 A				**S82K-01524**

(This table continues on the next page.)

Ordering Information Table – continued from previous page

Rated input voltage	Power ratings	Output voltage	Output current	Function configuration			Part number
				Output	Undervoltage alarm	PFC	
100 to 240 VAC	30 W	5 V	5.0 A	Single output	Indicator only	No	**S82K-03005**
		12 V	2.5 A				**S82K-03012**
		24 V	1.3 A				**S82K-03024**
	50 W	24 V	2.1 A				**S82K-05024**
120/240 VAC selectable	90 W	24 V	3.75 A		Indicator and output		**S82K-P09024**
						Yes	**S82K-09024**
	100 W	24V	4.2 A			No	**S82K-P10024**
						Yes	**S82K-10024**
120/230 VAC selectable	240 W	24 V	10 A			No	**S82K-24024T**
					None		**S82K-24024**
100 to 230 VAC						Yes	**S82K-P24024**

■ MODEL NUMBER LEGEND

S82K - □ □ □ □ □ □ □

1 2 3 4

1. Power Factor Correction
None: No
P: Yes

2. Power Ratings
003: 3 W
007: 7.5 W
015: 15 W
030: 30 W
050: 50 W
090: 90 W
100: 100 W
240: 240 W

3. Output Voltage
05: +5 VDC
12: +12 VDC
15: +15 VDC
24: +24 VDC
27: Dual output +12/-12 VDC
28: Dual output +15/-15 VDC

4. Undervoltage alarm indicator/output
<For 3- to 100-W models>
None: Yes
<For 240-W models>
None:No
T: Yes

■ ACCESSORIES (SOLD SEPARATELY)

Stock Note: Shaded models are normally stocked.

Noise Filter

Item	Applicable power supply	Part number
Noise filter	3- to 50-W models	**S82Y-JF3-N**
	90-W and 100-W models	**S82Y-JF6-N**

DIN Rail

Item	Length	Width	Part number
DIN-rail (See *Dimensions* section for details.)	0.5 m (1.64 ft)	7.3 mm (0.29 in)	**PFP-50N**
	1 m (3.28 ft)	7.3 mm (0.29 in)	**PFP-100N**
	1 m (3.28 ft)	16 mm (0.63 in)	**PFP-100N2**

Specifications

■ NON-PFC MODELS

Item		Single output		Dual outputs	Single output					
Power rating		**3 W**	**7.5 W**	**7.5 W**	**15 W**	**30 W**	**50 W**	**90 W**	**100 W**	**240 W**
Efficiency (typical)		60% to 80% (Varies depending on specifications.)								
Input										
Voltage (See Note 1.)	AC	100 to 240 V (85 to 264 V)						120 V (85 to 132 V)/ 240 V (170 to 264 V) Selectable		120 V (85 to 132 V)/ 230 V (170 to 253 V) Selectable
	DC	90 to 350 V (See Note 2.)				Not possible				
Frequency		50/60 Hz (47 to 450 Hz)								
Current (See Note 3.)	100-V input	0.15 A max.	0.25 A max.		0.45 A max.	0.9 A max.	1.3 A max.	2.5 A max.		5.5 A max.
	200-V input				0.25 A max.	0.6 A max.	0.8 A max.	1.5 A max.		3.5 A max.
Leakage current (See Note 3.)	100-V input	0.5 mA max.								
	200-V input	1 mA max.								
Inrush current (See Note 3.)	100-V input	15 A max.				25 A max.				
	200-V input	30 A max.				50 A max.				
Noise filter		Yes								
Output (See Note 4.)										
Voltage adjustment range		±10% (V.ADJ)		Not possible (See Note 5.)	±10% (V.ADJ); –10% to 15% for S82K-03012/-03024/-05024					
Ripple (See Note 3.)		2% (p-p) max.								
Input variation influence		0.5 % max. (at 85 to 264 VAC, 100% load)						0.5 % max. (at 85 to 132 VAC/ 170 to 264 VAC input, 100% load)		0.5 % max. (at 85 to 132 VAC/170 to 253 VAC input, 100% load)
Load variation influence		1.5% max. (0 to 100% load)		+V: 1.5% max. -V: 3 % max. (0 to 100% load)	1.5% max. (0 to 100% load)	1.5% max. (10 to 100% load)				
Temperature variation influence (See Note 3.)		0.05%/°C max.								
Startup time		100 ms max. (up to 90% of output voltage at rated input and output)						200 ms max.		300 ms max.
Hold time (See Note 3.)		20 ms min.								

(This table continues on the next page.)

Note: 1. Use with DC voltage input is beyond the conditions of approval or conformance to applicable safety standards.
2. Use the 7.5-W single-output models under the load of 90% max. if the voltage range is between 90 and 110 VDC.
3. Defined with a 100% load and the rated input voltage (100 or 200 VAC).
4. The output specification is defined at the power supply output terminals.
5. The settings for the output voltage must be within the following range:
+V: ±1% of the rated value
–V: ±5% of the rated value

Specifications Table – continued from previous page

Item	Single output		Dual outputs	Single output					
Power rating	**3 W**	**7.5 W**	**7.5 W**	**15 W**	**30 W**	**50 W**	**90 W**	**100 W**	**240 W**
Additional functions									
Overload protection	105% to 160% (105% to 250% for dual outputs model, 101% to 111% for 90-W model) of rated load current, automatic reset (See Note 6.)								
Overvoltage protection (See Note 7.)	No								S82K-24024T model only
Undervoltage alarm indicator (DC LOW indicator)	Yes (color: red)								S82K-24024T model only
Undervoltage alarm output (DC LOW output)	No							Yes	S82K-24024T model only
Parallel operation	Not possible							Possible (2 units max.)	
Characteristics									
Ambient temperature	Operating	See the derating curve in the *Engineering Data* section (no condensation or icing)							
	Storage	–25°C to 65°C (-13°F to 149°F) with no condensation or icing							
Ambient humidity	Operating	25% to 85%							
	Storage	25% to 90%							
Dielectric strength	3,000 VAC at 50/60 Hz for 1 min (between all inputs and outputs) 2,000 VAC at 50/60 Hz for 1 min (between all inputs and GR terminal) 1,000 VAC at 50/60 Hz for 1 min (between all outputs and GR terminal) Alarm current: 10 mA (3- to 7.5-W models) 20 mA (15- to 100-W models) 25 mA (240-W models)								
Insulation resistance	100 MΩ min. at 500 VDC (between all outputs and all inputs/GR terminal)								
Vibration resistance	Malfunction: 10 to 55 Hz, 0.375-mm (0.15-mm for 240-W model) single amplitude for 2 hrs each in X, Y, and Z directions								
Shock resistance	Malfunction: 300 m/s^2, 3 times each in ±X, ±Y, and ±Z directions								
Screw tightening torque	0.74 N • m max. (See Note 8.)								
Output indicator	Yes (green)								
Electromagnetic interference (See Note 3.)	Conforms to FCC class B						Conforms to FCC class A		

(This table continues on the next page.)

Note: 1. Use with DC voltage input is beyond the conditions of approval or conformance to applicable safety standards.
2. Use the 7.5-W single-output models under the load of 90% max. if the voltage range is between 90 and 110 VDC.
3. Defined with a 100% load and the rated input voltage (100 or 200 VAC).
4. The output specification is defined at the power supply output terminals.
5. The settings for the output voltage must be within the following range:
+V: ±1% of the rated value
–V: ±5% of the rated value
6. When using the 7.5-W single-output models within the input voltage range between 90 and 110 VDC, the protection function will operate at a current of 95% to 160% of the rated load current. When using the 90-W model under the ambient temperature over 25°C, the protection function may operate at a current of 92% to 111% of the rated load current.
7. Circuit-breaker type. To reset, turn the input power supply OFF, then after 1 min has elapsed, turn the input power supply ON again.
8. Do not press down on the terminal block with a force exceeding 75 N while tightening the terminals.
9. To ensure the emission ratings, a noise filter should be used on the output lines at the closest point.
(3- to 50-W models: S82Y-JF3-N, 90-W and 100-W models: S82Y-JF6-N)
10. To ensure the Emission Enclosure rating, a ferrite ring core should be used on all cables (for S82K-P24024).
11. To meet Class 2 requirement with 100-W model, either a fuse or circuit breaker that is UL listed or CSA certified, and rated at 4.2 A max. should be used in the output of the power supply. Only then can the power supply output be considered as meeting Class 2.

Specifications Table – continued from previous page

Item		Single output		Dual outputs	Single output					
Power rating		**3 W**	**7.5 W**	**7.5 W**	**15 W**	**30 W**	**50 W**	**90 W**	**100 W**	**240 W**
Characteristics (continued)										
EMC (See Note 9.)	3-W to 100-W models	(EMI): EN50081-1 Emission Enclosure: EN55022 class B (equivalent to EN55011 class B) Emission AC Mains: EN55022 class B (equivalent to EN55011 class B) Emission Output Ports: EN55022 class A (with a recommended optional filter) (See Note 9.)								
	240-W models	(EMI): EN50081-2 Emission Enclosure: EN55011 class A (See Note 10.) Emission AC Mains: EN55011 class A (See Note 10.) Harmonic Current: EN61000-3-2 (only for S82K-P24024)								
	Common to all models	(EMS): EN50082-2 Immunity ESD: EN61000-4-2: 4-kV contact discharge (level 2), 8-kV air discharge (level 3) Immunity Burst: EN61000-4-4: 2-kV power-line (level 3), 2-kV output line (level 4) Immunity Surge: EN61000-4-5: between 2-kV lines (except for 240-W models), between 4-kV line and FG (except for 240-W models)								
Approved standards		UL508 (Listing)/1950; Class 2 Power Supply, CE; CSA C22.2 No.14/No.950; EN50178 (VDE0160), EN60950 (Conforms to VDE0106/P100) * 100-W model must have a fuse in the output to be Class 2. (See Note 11.)								UL508 (Listing)/1012; CE; CSA C22.2 No.14, CSA E.B. 1402C; EN50178 (VDE0160), EN60950 (Conforms to VDE106/P100)
Weight		150 g max.			260 g max.	380 g max.	400 g max.	600 g max.		1,800 g max.

Note: 1. Use with DC voltage input is beyond the conditions of approval or conformance to applicable safety standards.
2. Use the 7.5-W single-output models under the load of 90% max. if the voltage range is between 90 and 110 VDC.
3. Defined with a 100% load and the rated input voltage (100 or 200 VAC).
4. The output specification is defined at the power supply output terminals.
5. The settings for the output voltage must be within the following range:
+V: ±1% of the rated value
–V: ±5% of the rated value
6. When using the 7.5-W single-output models within the input voltage range between 90 and 110 VDC, the protection function will operate at a current of 95% to 160% of the rated load current. When using the 90-W model under the ambient temperature over 25°C, the protection function may operate at a current of 92% to 111% of the rated load current.
7. Circuit-breaker type. To reset, turn the input power supply OFF, then after 1 min has elapsed, turn the input power supply ON again.
8. Do not press down on the terminal block with a force exceeding 75 N while tightening the terminals.
9. To ensure the emission ratings, a noise filter should be used on the output lines at the closest point.
(3- to 50-W models: S82Y-JF3-N, 90-W and 100-W models: S82Y-JF6-N)
10. To ensure the Emission Enclosure rating, a ferrite ring core should be used on all cables (for S82K-P24024).
11. To meet Class 2 requirement with 100-W model, either a fuse or circuit breaker that is UL listed or CSA certified, and rated at 4.2 A max. should be used in the output of the power supply. Only then can the power supply output be considered as meeting Class 2.

■ PFC MODELS (S82K-P□□□24)

Notes below this table apply to this page only.

Item		Single output		
Power Rating		**90 W**	**100 W**	**240 W**
Efficiency (typical)		60% to 80% (Varies depending on specifications.)		
Input				
Voltage		120 V (85 to 132 VAC)/240 V (170 to 264 VAC) Selectable		100 to 230 V (85 to 253 VAC)
Frequency		50/60 Hz (47 to 63 Hz)		
Current (See Note 1.)	100-V input	2.5 A max.		4 A max.
	200-V input	1.0 A max.		2 A max.
Power factor	100-V input	---		0.95 min.
	200-V input	0.7 min.		0.95 min.
Leakage current (See Note 1.)	100-V input	0.5 mA max.		
	200-V input	1 mA max.		
Inrush current (See Note 1.)	100-V input	25 A max.		
	200-V input	50 A max.		
Noise filter		Yes		
Output (See Note 2.)				
Voltage adjustment range		±10% (V.ADJ)		
Ripple (See Note 1.)		2% (p-p) max.		
Input variation influence		0.5% max. (at 85 to 132 VAC/170 to 264 VAC input, 100% load)		0.5% max. (at 85 to 253 VAC input, 100% load)
Load variation influence		1.5% max. (0 to 100% load)		1.5% max. (10 to 100% load)
Temperature variation		0.05%/°C max.		
Start up time		200 ms max.		1,000 ms max.
Hold time (See Note 1.)		20 ms min.		
Additional function				
Overload protection		101% to 111% of rated load current, inverted L drop, automatic reset (See Note 3.)	105% to 160% of rated load current, inverted L drop, automatic reset	
Overvoltage protection		No		
Under voltage alarm indicator		Yes (color: red)		No
Under voltage alarm output		Yes		No
Parallel operation		Impossible	Possible (2 units max.) (See Note 4.)	

(PFC specifications table continues on the next page.)

Note: 1. Defined with a 100% load and the rated input voltage (100 or 200 VAC)
2. The output specification is defined at the power supply output terminals.
3. When the ambient temperature exceeds 25°C, the protection function may operate at a current of 92% to 111% of the rated load current.
4. Parallel operation is set with the Parallel/Single Operation Selector Switch.

Specifications Table PFC Models (S82K-P□□□24) – continued from previous page

Item		Single output		
Power Rating		**90 W**	**100 W**	**240 W**
Characteristics				
Ambient temperature	Operating	See the derating curve in the Engineering Data section (no condensation or icing)		
	Storage	–25°C to 65°C (no condensation or icing)		
Ambient humidity	Operating	25% to 85%		
	Storage	25% to 90%		
Dielectric strength		3,000 VAC at 50/60 Hz for 1 min. (between all inputs and outputs) 2,000 VAC at 50/60 Hz for 1 min. (between all inputs and GR terminal) 1,000 VAC at 50/60 Hz for 1 min. (between all outputs and GR terminal) Alarm current: 20 mA (90- and 100-W models) 25 mA (240-W models)		
Insulation resistance		100 MΩ min. at 500 VDC (between all outputs and all inputs/GR terminal)		
Vibration resistance		Malfunction:10 to 55 Hz, 0.375-mm single amplitude for 2 hrs each in X, Y, and Z directions		Malfunction:10 to 55 Hz, 0.15-mm single amplitude for 2 hrs each in X, Y, and Z directions
Shock resistance		Malfunction:150 m/s^2, 3 times each in ±X, ±Y, and ±Z directions		Malfunction:300 m/s^2, 3 times each in ±X, ±Y, and ±Z directions
Screw tightening torque		0.74 N • m max. (See Note 2.)		
Output indicator		Yes (Green)		
Electromagnetic interference (See Note 1.)		Conforms to FCC class A		
EMC (See Notes 3, 4.)		<u>90-, 100-W Models</u> (EMI): EN50081-1 Harmonic Current: EN61000-3-2 (200 VAC input only) Emission Enclosure: EN55022 class B Emission AC Mains: EN55022 class B Emission Output Ports: EN55022 class A (with a recommended optional filter) (See Note 3.) <u>240-W Model</u> (EMI): EN50081-2 Harmonic Current: EN61000-3-2 Emission Enclosure: EN55011 class A (See Note 4.) Emission AC Mains: EN55011 class A <u>Common to All Models</u> (EMS): EN50082-2 Immunity ESD: EN61000-4-2: 4-kV contact discharge (level 2), 8-kV air discharge (level 3) Immunity Burst: EN61000-4-4: 2-kV power-line (level 3), 2-kV output line (level 4) Immunity Surge: EN61000-4-5: between 2-kV lines (except for 240-W models), between 4-kV line and FG (except for 240-W models)		
Approved standards		UL508 (Listing)/1950 Class 2 (UL1310)/Class 2 (CSA C22.2 No. 950) (See Note 5.) CSA C22.2 No. 14/No. 950, EN50178 (VDE160), EN60950 Conforms to VDE0106/P100		UL508 (Listing)/1012 CSA C22.2 No. 14/E.B. 1402C, EN50178 (VDE160), EN60950, Conforms to VDE0106/P100
Weight		1,000 g max.		2,200 g max.

(The notes below apply to this page only.)

Note: 1. Defined with a 100% load and the rated input voltage (100 or 200 VAC)
2. Do not press down on the terminal block with a force exceeding 75 N while tightening the terminals.
3. To ensure the Emission Enclosure ratings, a noise filter should be used on the output lines at the closest point. (90- and 100-W models: S82Y-JF6-N)
4. To ensure the Emission Enclosure rating, a ferrite ring core should be used on all cables.
5. To meet Class-2 requirements with the 100-W model, either a fuse or circuit breaker that is UL listed or CSA certified, and rated at 4.2 A max. should be used in the output of the power supply. Only then can the power supply output be considered as meeting Class 2.

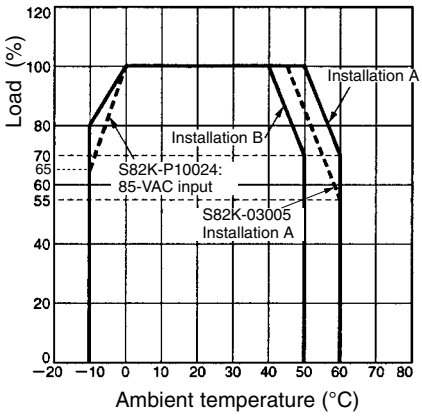
■ REFERENCE VALUE

Item	Value	Definition
Reliability (MTBF)	135,000 hrs min.	MTBF stands for Mean Time Between Failures, which is calculated according to the probability of accidental device failures, and indicates reliability of devices. Therefore, it does not necessarily represent a life of the product.
Life expectancy	8 yrs. min.	The life expectancy indicates average operating hours under the ambient temperature of 40°C and a load rate of 50%. Normally this is determined by the life expectancy of the built-in aluminum electrolytic capacitor.

Engineering Data

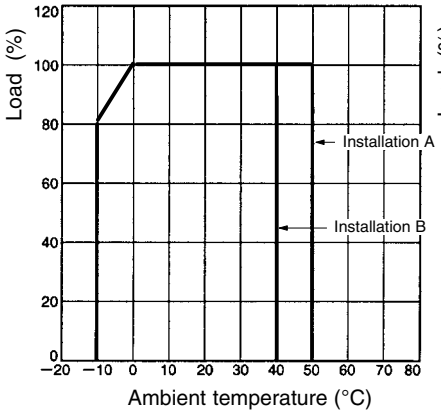
■ DERATING CURVE

3-/7.5-/15-/30-/50-/100-W Models
Single-Unit Operation

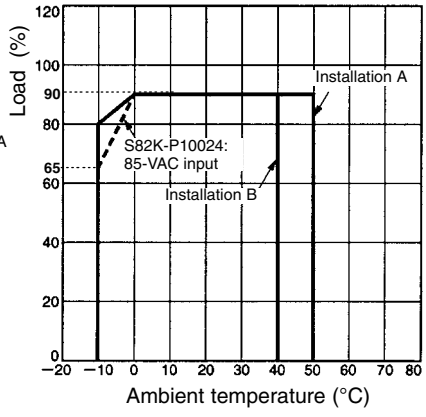


Note: When using the 7.5-W single-output models within the input voltage range between 90 and 110 VDC, the load rate will become 90% or less.

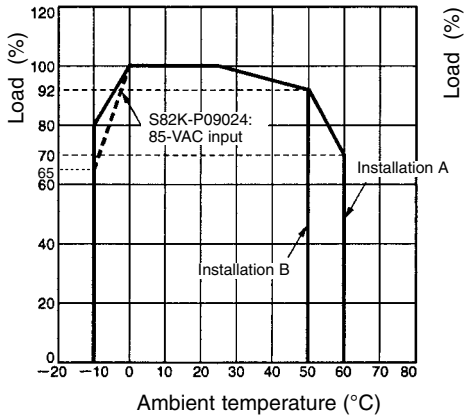
100-W Models without PFC
Parallel-Unit Operation



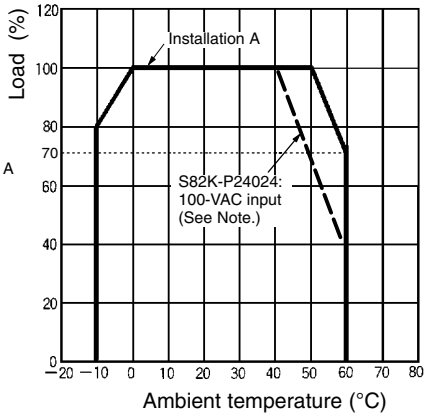
100-W Models with PFC
Parallel-Unit Operation



90-W Models
Single-Unit Operation

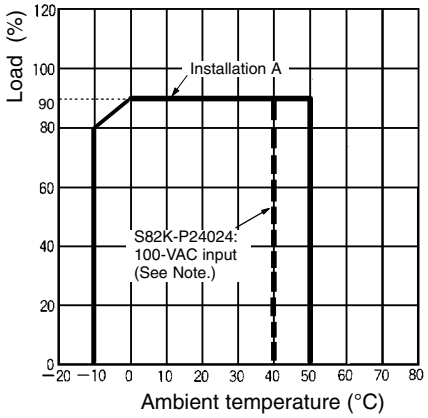


240-W Model
Single-Unit Operation



Note: 100-VAC input: 85 to 132 VAC

240-W Model
Parallel-Unit Operation

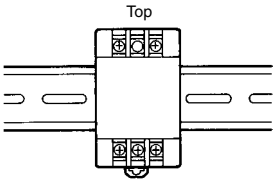


Note: 100-VAC input: 85 to 132 VAC

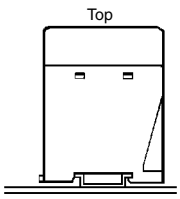
Mounting Position

The *derating curve* can be ensured for these two kinds of installations.

(A) Standard (Vertical) Installation



(B) Horizontal Installation



Note: Horizontal installation is not permitted for 240-W models.

■ OVERLOAD PROTECTION

The Power Supply is provided with an overload protection function that protects the load and the power supply from possible damage by overcurrent. When the output current rises above a set value (refer to the table below), the protection function is triggered, decreasing the output voltage. When the output current falls within the rated range, the overload protection function is automatically cleared.

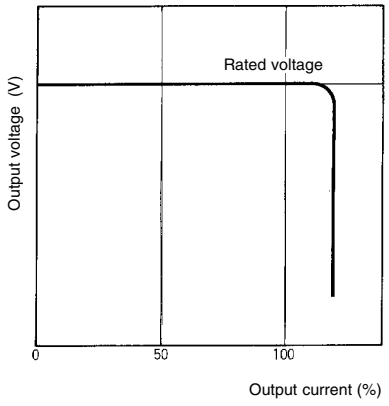
	Single output		Dual outputs	Single output					
	3 W	7.5 W	7.5 W	15 W	30 W	50 W	90 W	100 W	240 W
Set value	105% to 160% of rated load current (See Note 1.)		105% to 250% of rated load current	105% to 160% of rated load current			101% to 111% of rated load current (See Notes 2 and 3.)	105% to 160% of rated load current (See Note 3.)	
Operation	Inverted L drop type, automatic reset				Inverted L drop/intermittent operation type, automatic reset		Inverted L drop type, automatic reset		

Note: 1. When using the 7.5-W single-output models within the input voltage range between 90 and 110 VDC, the overload protection function will operate at currents from 95% to 160% of the rated load current.

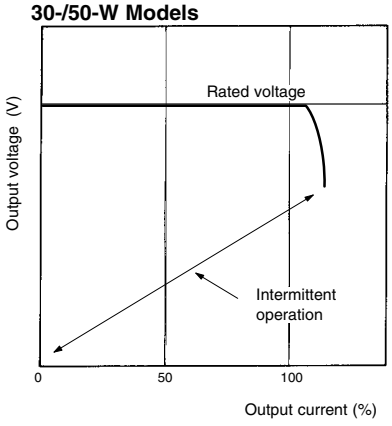
2. When using the 90-W model at an ambient temperature exceeding 25°C, the overload protection function will operate at currents from 92% to 111% of the rated load current.

3. When using the 100-W model with PFC in parallel operation, the overload protection function will operate at currents from 3.78 to 4.2 A.

3-/7.5-/15-/90-/100-/240-W Models



30-/50-W Models



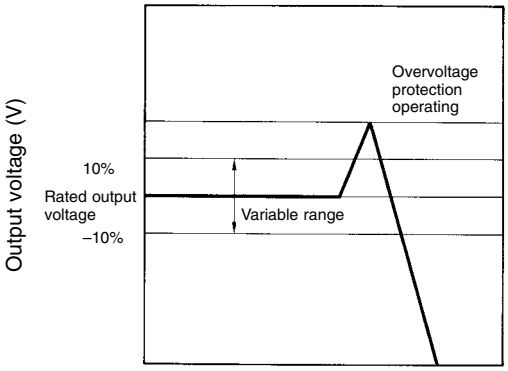
Note: Do not short-circuit the output terminals of the S82K or use the S82K with excessive output current for a long time, otherwise the internal circuitry of the S82K may be deteriorated or damaged.

When Using Dual Output (+/–) Models

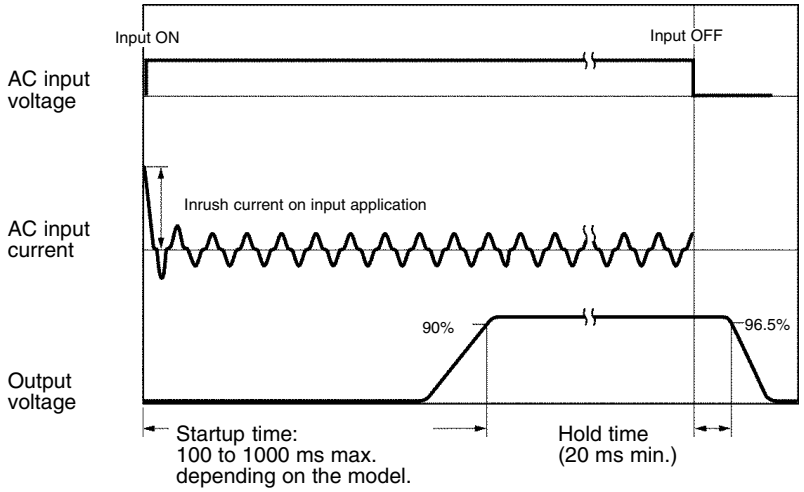
The +V output detects the total output power (+V output and -V output) to trigger the short-circuit protection against overcurrent. This protection varies depending on the -V output state. The -V output independently triggers the short-circuit protection.

■ OVERVOLTAGE PROTECTION (S82K-24024T ONLY)

The Power Supply is provided with an overvoltage protection function that protects the load and the Power Supply from possible damage by overvoltage. When the output voltage rises above a set value, the protection function is triggered, shutting off the output voltage. If this occurs, reset the Power Supply by turning it off for 1 minute min. and then turning it on again.



■ INRUSH CURRENT, STARTUP TIME, HOLD TIME



Operation

■ UNDERVOLTAGE ALARM INDICATOR AND OUTPUT FUNCTION (ALL MODELS EXCEPT S82K-24024/P24024)

If the output voltage at the output terminal drops to 75% to 90% of the rated voltage, the red indicator of the S82K (DC LOW indicator) will be lit. In the case of the 90-W, 100-W and S82K-24024T, a voltage drop alarm will be output via the relay available in the models (DC LOW output).

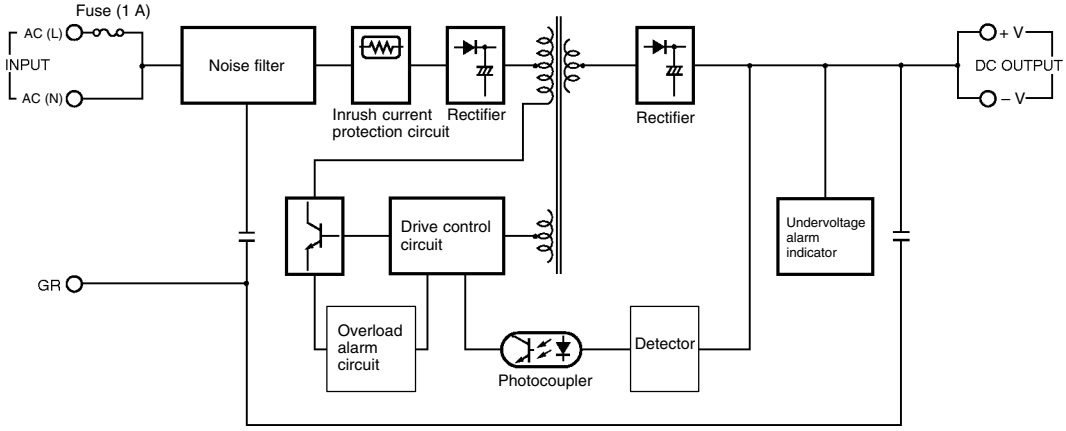
This function detects the voltage at the output terminal of the Power Supply. To check the precise output voltage, measure the voltage at the terminal of the load.

Indicator	Voltage	Operation of 90-W, 100-W, S82K-24024T's output (DC LOW output) (See Note 2.)
Green: ✱ DC ON Red: ○ DC LOW	If the voltage at the output terminal is more than 82% of the rated voltage and operation is normal, the green indicator will be lit and the red indicator will not be lit.	
Green: ✱ DC ON Red: ✱ DC LOW (See Note 1.)	If the voltage at the output terminal drops to below 82% of the rated voltage, the red indicator will be lit. (See Note 3.)	
Green: ○ DC ON Red: ○ DC LOW	If the voltage at the output terminal is 0 V, both the green and red indicators will not be lit.	

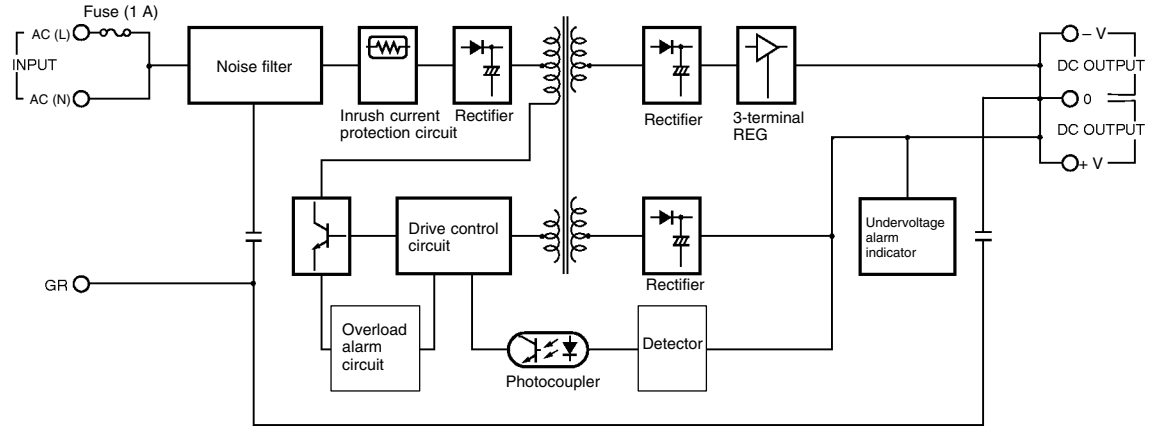
Note: 1. The more the voltage at the output terminal drops, the darker both the green and red indicators will be.
2. The relay contacts have a capacity of 0.1 A at 24 VDC.
3. The red indicator will actually first light at a voltage between 75% and 90% of the rated voltage.

■ BLOCK DIAGRAMS

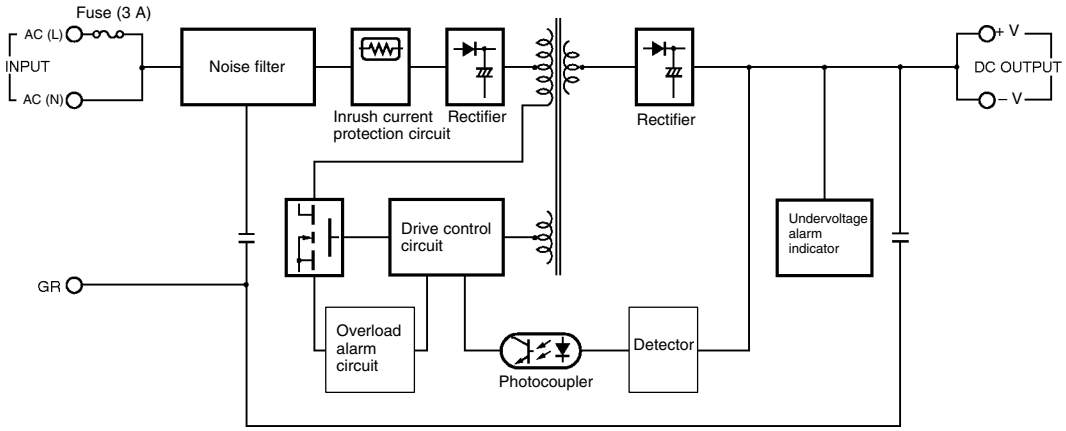
S82K-003□□ (3 W)
S82K-007□□ (7.5 W, Single Output)



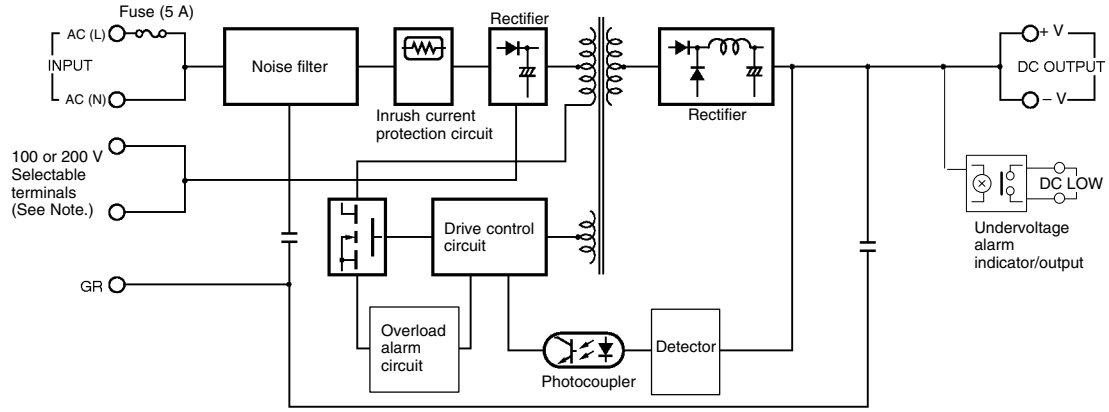
S82K-007□□ (7.5 W, Dual Outputs)



S82K-015□□ (15 W)
S82K-030□□ (30 W)
S82K-05024 (50 W)

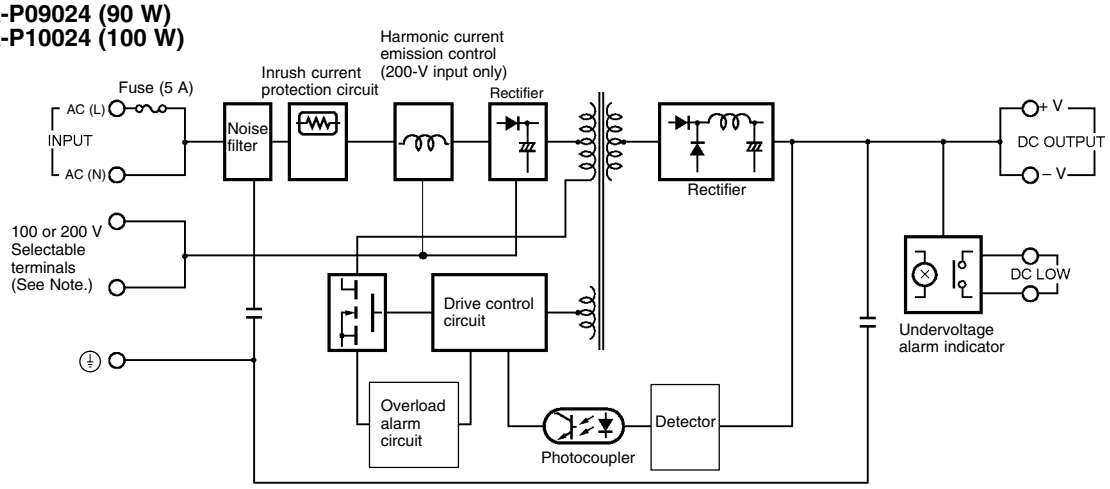


S82K-09024 (90 W)
S82K-10024 (100 W)



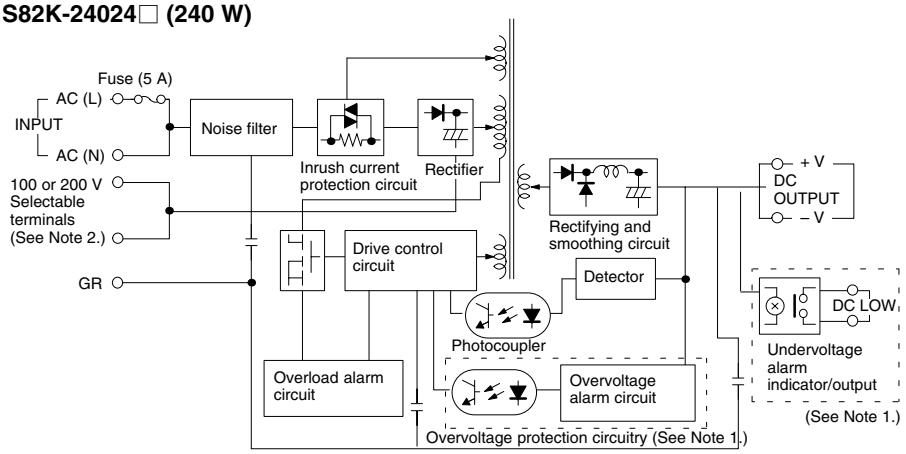
Note: Use the short bar to short-circuit terminals 7 and 8 to select 100 to 120 VAC and remove the short bar to select 200 to 240 VAC.

S82K-P09024 (90 W)
S82K-P10024 (100 W)



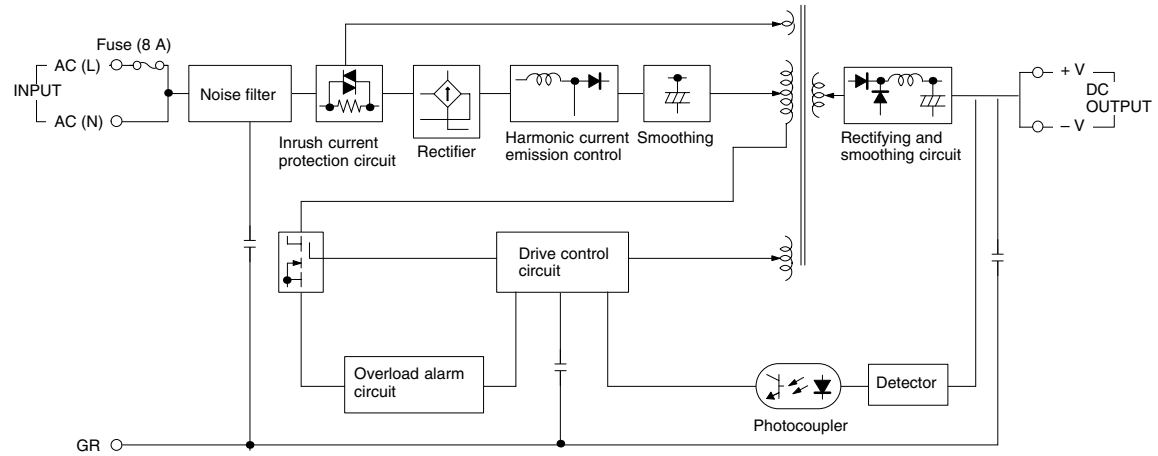
Note: Use the short bar to short-circuit terminals 7 and 8 to select 100 to 120 VAC and remove the short bar to select 200 to 240 VAC.

S82K-24024□ (240 W)



Note: 1. The overvoltage protection circuitry and undervoltage alarm indicator/output are available in the S82K-24024T only.
2. Use the short bar to short-circuit terminals 7 and 8 to select 100 to 120 VAC and remove the short bar to select 200 to 230 VAC.

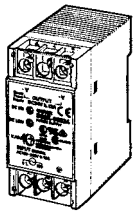
S82K-P24024 (240 W)

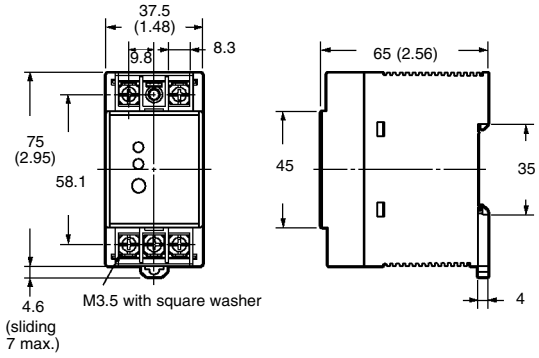


Dimensions

Unit: mm (inch)

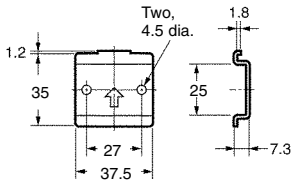
■ S82K-003□□ (3 W)
S82K-007□□ (7.5 W)



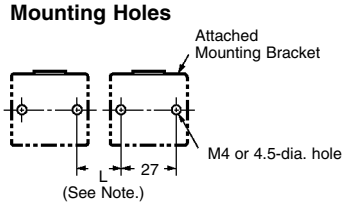


Mounting Brackets
(Supplied with the Power Supply)

Used when not mounting the Power Supply directly on the DIN rail.

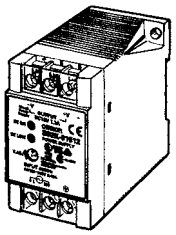


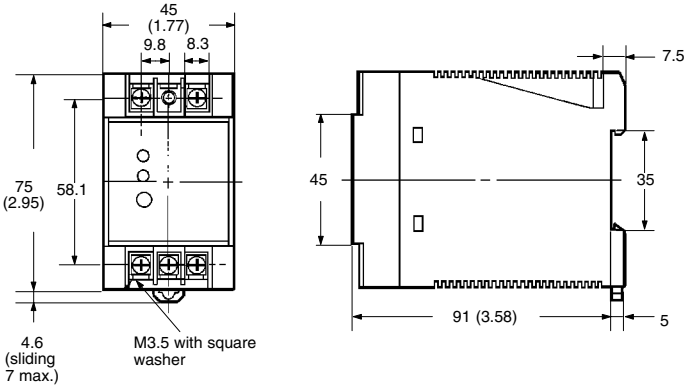
Mounting Holes



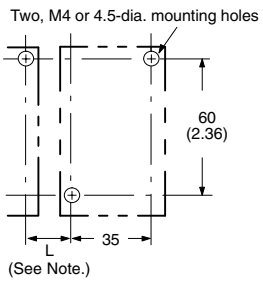
Note: If more than one Power Supply is installed in a row, keep a distance of 20 mm min. (L = 20 mm min.) between each adjacent Power Supply.

■ S82K-015□□ (15 W)



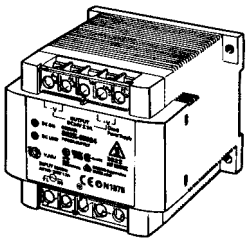


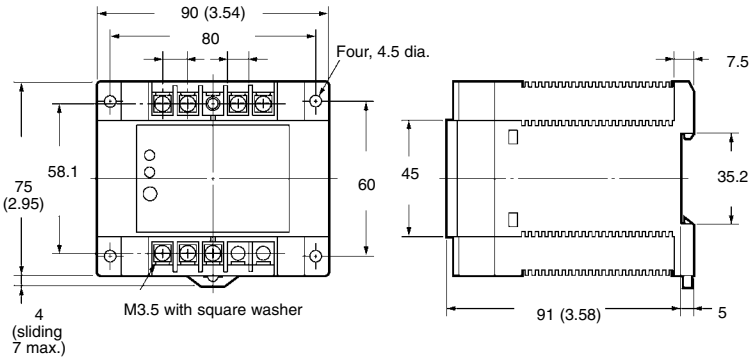
Mounting Holes



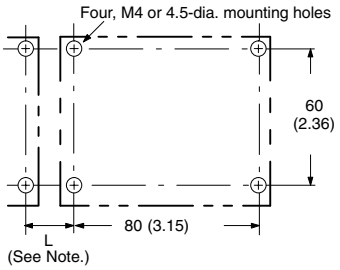
Note: If more than one Power Supply is installed in a row, keep a distance of 20 mm min. (L = 20 mm min.) between each adjacent Power Supply.

■ S82K-030□□ (30 W)
S82K-05024 (50 W)





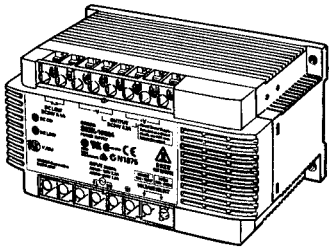
Mounting Holes

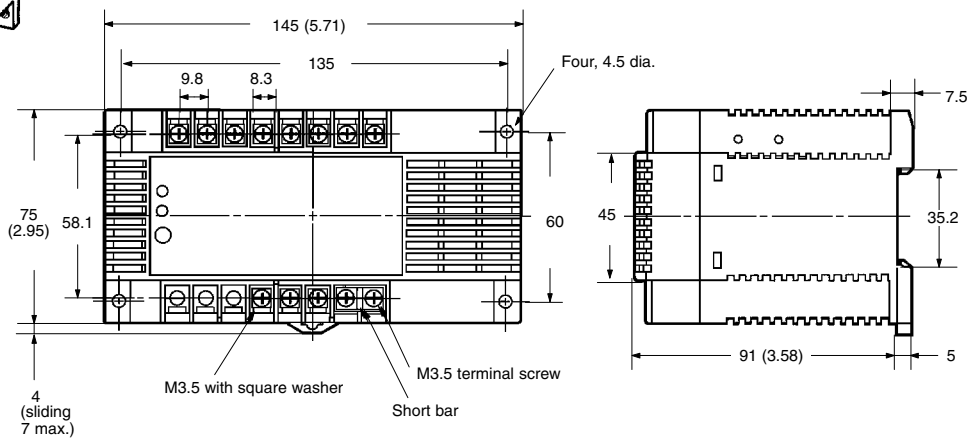


Note: If more than one Power Supply is installed in a row, keep a distance of 20 mm min. (L = 20 mm min.) between each adjacent Power Supply.

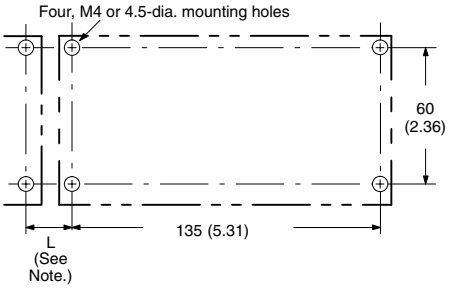
Unit: mm (inch)

■ S82K-□09024 (90 W)
S82K-□10024 (100 W)



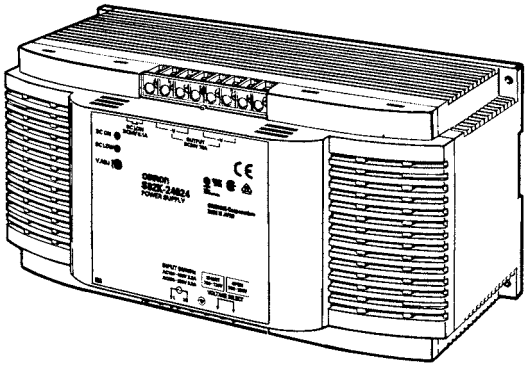


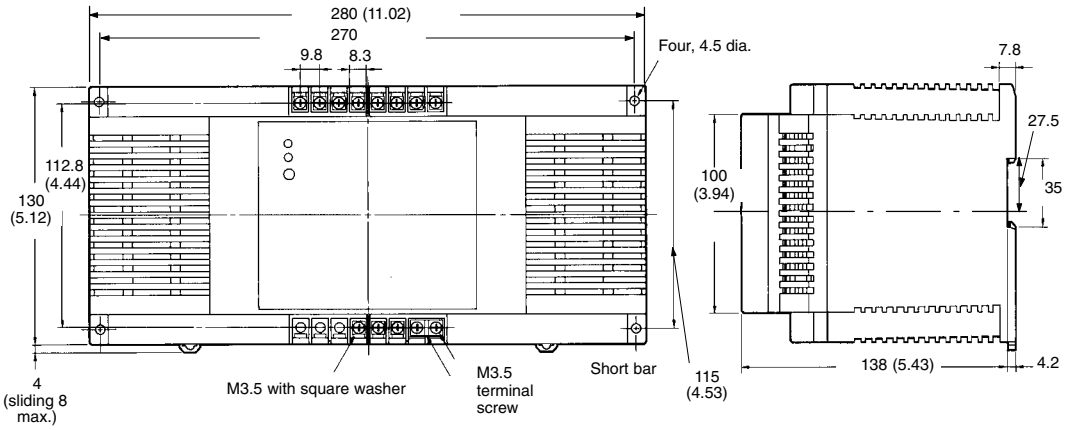
Mounting Holes



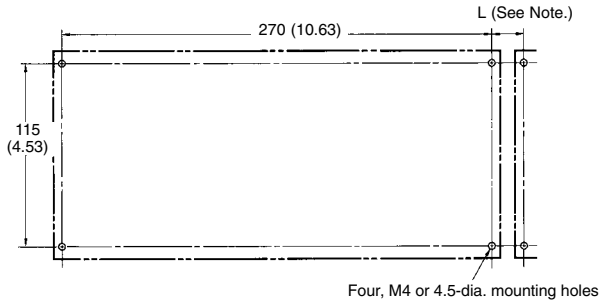
Note: If more than one Power Supply is installed in a row, keep a distance of 20 mm min. (L = 20 mm min.) between each adjacent Power Supply.

■ S82K-□24024□ (240 W)





Mounting Holes



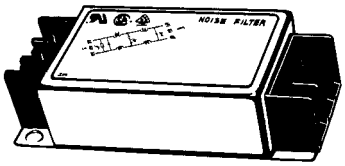
Note: If more than one Power Supply is installed in a row, keep a distance of 20 mm min. (L = 20 mm min.) between each adjacent Power Supply.

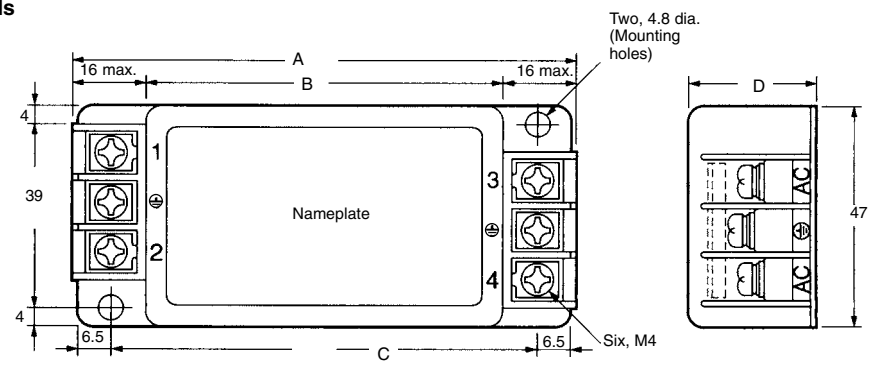
Unit: mm (inch)

■ ACCESSORIES

Noise Filter (Order Separately)

S82Y-JF3-N for 3- to 50-W models
S82Y-JF6-N for 90- and 100-W Models

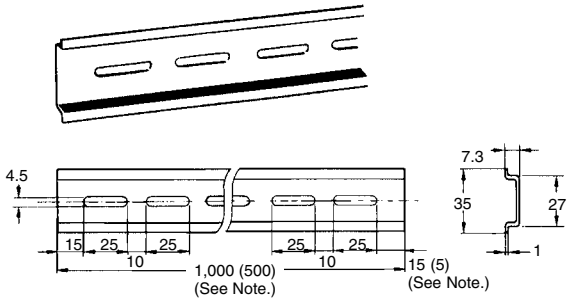




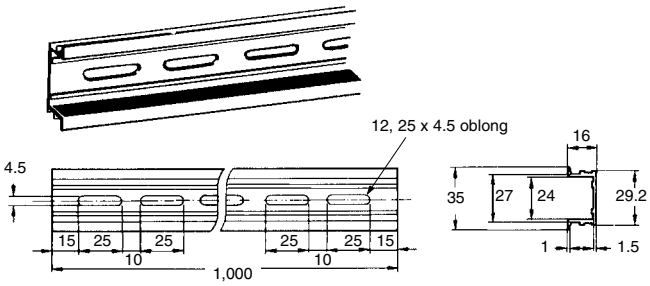
Model	A	B	C	D
S82Y-JF3-N	107 (4.21)	75 (2.95)	90 (3.54)	26 (1.02)
S82Y-JF6-N	117 (4.60)	85 (3.35)	100 (3.93)	30 (1.18)

DIN Rail Mounting Track (Order Separately)

PFP-100N/PFP-50N



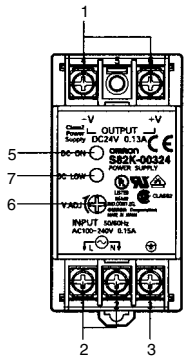
PFP-100N2



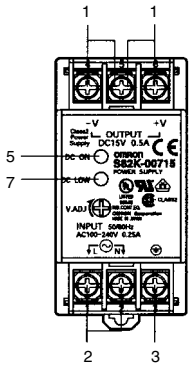
Note: The values shown in parentheses are for the PFP-50N.

Installation

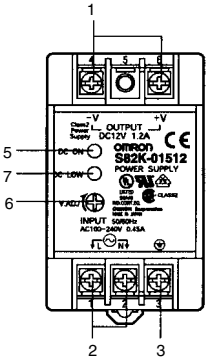
■ **S82K-003□□/ S82K-007□□ (Single Output)**



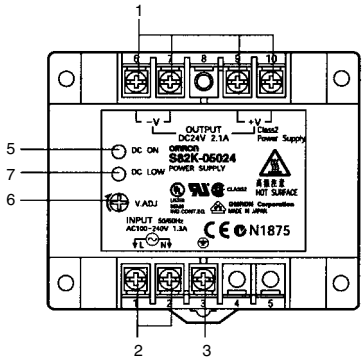
■ **S82K-007□□ (Dual outputs)**



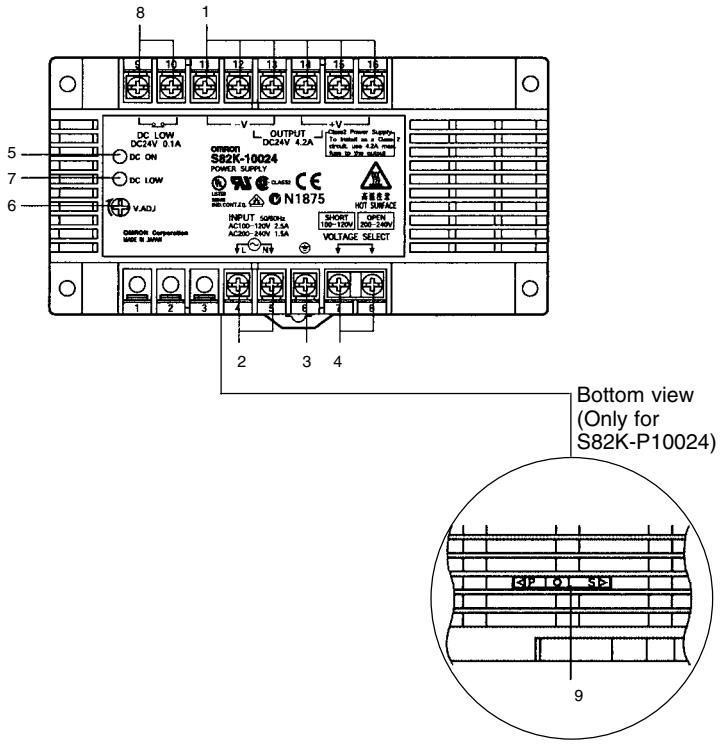
■ **S82K-015□□**



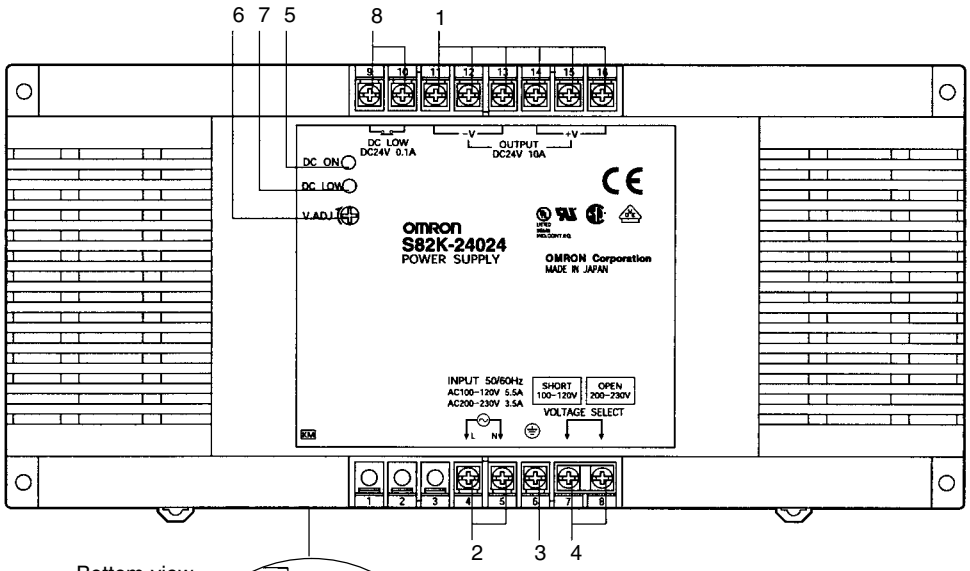
■ **S82K-030□□/ S82K-05024**



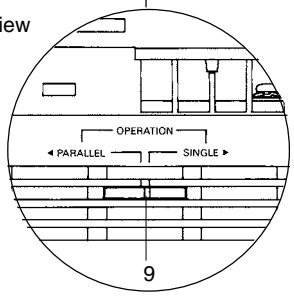
■ **S82K-□09024/ S82K-□10024**



■ S82K-□24024□



Bottom view



1. **DC Output Terminals:** Connect the load lines to these terminals.
2. **Input Terminals:** Connect the input lines to these terminals.
3. **Ground Terminal (GR):** Connect a ground line to this terminal.
4. **Input Voltage Selector Terminals:** Selects a 100-V or 200-V input voltage.
5. **Output Indicator (DC ON):** Lights while a Direct Current (DC) output is ON.
6. **Output Voltage Adjuster(V.ADJ):** It is possible to increase or decrease the output voltage.
7. **Undervoltage Alarm Indicator (DC LOW):** Other than S82K-24024 and S82K-P24024 models.
8. **Undervoltage Alarm Output (DC LOW)**: S82K-□09024/-□10024/-24024T models only.
9. **Parallel/Single Operation Selector:** Set to “PARALLEL” or “P” for parallel operation.

Precautions

⚠ Caution

Be sure to connect the grounding line. Not doing so may result in electric shock.

⚠ WARNING

Do not attempt to disassemble the Power Supply or touch its internal parts while power is being supplied. Doing so may result in electric shock.

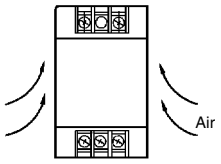
Do not touch the terminals of the Power Supply within one minute after power has been turned OFF. Doing so may result in electric shock due to a residual voltage.

Do not touch the Power Supply Unit while power is being supplied or immediately after power has been turned OFF. Doing so may result in a skin burn due to high temperature of the Power Supply.

■ MOUNTING

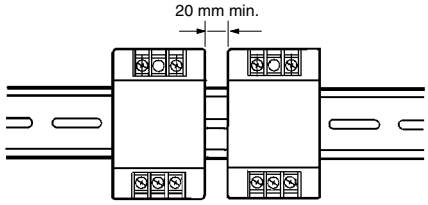
To improve and maintain the reliability of the Power Supply over a long period of time, consider the heat dissipation.

The Power Supply is designed to dissipate heat by means of natural air-flow. Mount the Power Supply so that air flow takes place around the Power Supply.

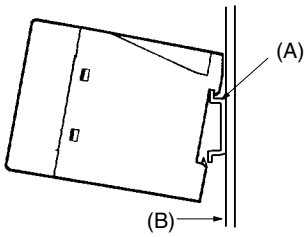


When mounting two or more Power Supplies side-by-side, allow at least 20 mm (0.79 in) spacing between them, as shown in the following illustration.

Forced-air cooling is recommended.

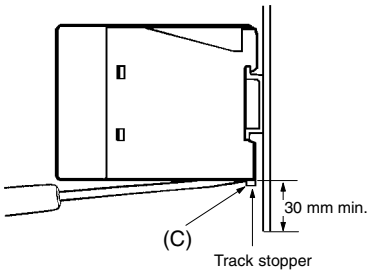


To mount the Power Supply on a DIN rail, hook portion (A) of the Power Supply to the rail and press the Power Supply toward direction (B).



■ REMOVAL

To remove the Power Supply, pull down portion (C) with a flat-blade screwdriver and pull out the Power Supply.



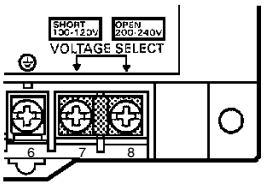
When tightening the terminals, do not tighten the terminal block to a torque greater than 75 N.

■ SELECTION OF 100 TO 120 VAC OR 200 TO 240 VAC INPUT VOLTAGE (S82K-□09024/-□10024/-24024/-24024T)

Select a 120 V or 240 V input by shorting or opening the Input Voltage Selector Terminals, as shown in the following diagram.

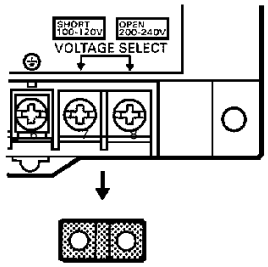
The default setting is 240 V.

100-V to 120-V Input



Note: Use the short bar to short-circuit terminals 7 and 8.

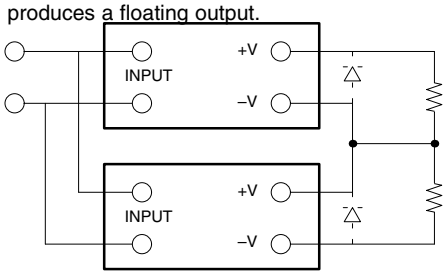
200-V to 240-V Input



Note: Remove the short bar.

■ GENERATING OUTPUT VOLTAGE (±)

An output of ± can be generated by using two Power Supplies (as shown below) because the Power Supply produces a floating output.



When connecting the Power Supplies in series with an operation amplifier, connect diodes to the output terminals as shown by the dotted lines in the figure. No diodes are required with S82K 90-/100-/240-W models.

■ WIRING

To prevent incorrect wiring of the input/output terminals, pay attention to their polarities.

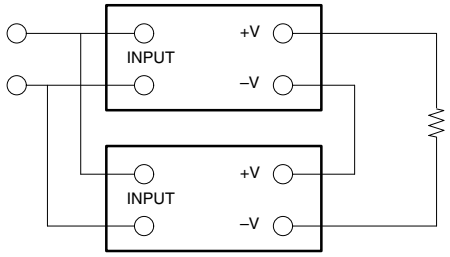
■ BATTERY CHARGING

With S82K-□09024/-□10024/-24024T models, a reduction in lifetime due to over discharge of the battery can be prevented using the DC LOW output. (Discharge can be interrupted at 0.75 to 0.9 × 24 V.)

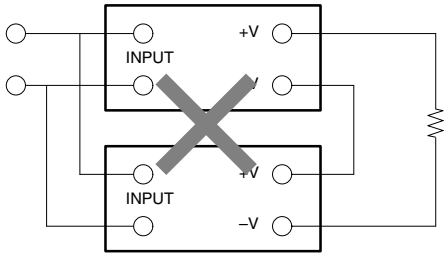
■ SERIES OPERATION

S82K 90-W/100-W/240-W models can be operated in series. It must be noted that the + output of the 7.5-W dual output model cannot be connected in series to its – output.

90-W/100-W/240-W Models



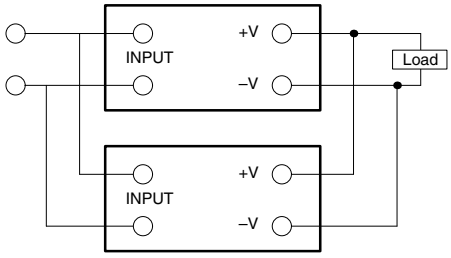
3-, 7.5-, 15-, 30-, 50-W Models



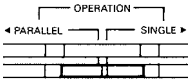
■ PARALLEL OPERATION

S82K 100-W/240-W models can be operated in parallel. Perform parallel operation with power supplies satisfying the same specifications.

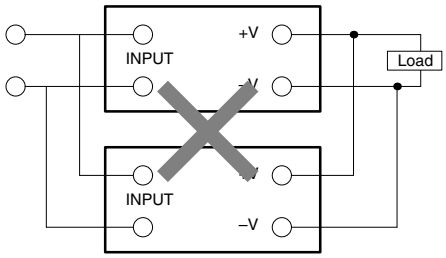
100-W and 240-W Models



Note: When operating the S82K-P10024 or 240-W model in parallel operation, set the switch to "PARALLEL." Refer to the derating curve for the rated current under this operation.



3-, 7.5-, 15-, 30-, 50- and 90-W Models



■ PARALLEL OPERATION PRECAUTIONS

- The length and thickness of each wire connected to the load must be the same so there is no difference in voltage drop value between the load and the output terminals of each Power Supply.
- Adjust the output voltage of each Power Supply so there will be no difference in output voltage between each Power Supply.
- If the S82K-P10024 or 240-W Power Supply is used in single operation under the parallel operation setting, the overcurrent protection will be actuated at an output of 90% to 95% (in current) and will not allow a 100% output.
- If the S82K-P10024 or 240-W Power Supplies are used in parallel operation under the single operation setting, one of them will operate at 110% output, causing severe heat derating and shortening the service life.

Minimum Output Current

The minimum output current of the S82K-00727 and S82K-00728 is restricted by the output voltage and control method.

Note: All the outputs of the S82K-00727 and S82K-00728 are controlled by the +V output. If the +V output current falls to 10% or less of the rated output, the –V output voltage may drop.

Operating and Storage Environments

To avoid deterioration of the operating characteristics or malfunction, do **NOT** use or store the Unit in locations subject to the following conditions:

- Direct sunlight.
- Ambient operating temperatures outside the range indicated by the derating curve.
- Ambient operating humidity outside the range of 25% to 85%.
- Condensation as the result of severe changes in temperature.
- Ambient storage temperatures outside the range of –25°C to 65°C.
- Corrosive or flammable gases.
- Dust (especially iron dust) or salts.
- Shock or vibration.
- Exposure to water, oil, or chemicals.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, divide by 25.4

OMRON®

OMRON ELECTRONICS LLC
One Commerce Drive
Schaumburg, IL 60173
847-843-7900
For US technical support or other inquiries:
800-556-6766

OMRON CANADA, INC.
885 Milner Avenue
Toronto, Ontario M1B 5V8
416-286-6465

OMRON ON-LINE
Global - http://www.omron.com
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