Switch Mode Power Supply
S8TS

Block-type Switch mode Power Supply That Mounts to DIN-rail

- Power supply range of 60 to 240 W available with just one model (24-V models).
- Easy creation of multi-power supply configurations with different output power supplies connected together (24-V, 12-V, and 5-V models).
- Improve power supply system reliability by creating N+1 redundant systems (24-V and 12-V models).
- Approved by UL/CSA standards, EN60950 (IEC 950), and VDE 0160.

Model Number Structure

■ Model Number Legend

S8TS-□□□□□□-□□
1 2 3 4

1. Capacity
060: 60 W
030: 30 W
025: 25 W

2. Output Voltage
24: 24 V
12: 12 V
05: 5 V

3. Structure
None: Screw terminals
F: Connector terminals

4. Bus Line Connectors
None: Basic Block only
E1: S8T-BUS01 and S8T-BUS02 included

Ordering Information

■ Basic Block

Output voltage	Output current	Screw terminal type		Connector terminal type (See note 3.)	
		With Bus Line Connectors (See note 1.)	Without Bus Line Connectors (See note 2.)	With Bus Line Connectors (See note 1.)	Without Bus Line Connectors (See note 2.)
24 V	2.5 A	S8TS-06024-E1	S8TS-06024	S8TS-06024F-E1	S8TS-06024F
12 V	2.5 A	S8TS-03012-E1	S8TS-03012	S8TS-03012F-E1	S8TS-03012F
5 V	5 A	---	S8TS-02505	---	S8TS-02505F

■ Bus Line Connector

Type	Number of Connectors	Model number
AC line + DC line bus (For parallel operation)	1 Connector	S8T-BUS01
	10 Connectors (See note 4.)	S8T-BUS11
AC line bus (For series operation or isolated operation)	1 Connector	S8T-BUS02
	10 Connectors (See note 5.)	S8T-BUS12

Note 1. One S8T-BUS01 Connector and one S8T-BUS02 Connector are included as accessories.
2. Bus Line Connectors are ordered separately if necessary.
3. Attached connectors: 2ESDPLM-05P (for output terminal) and 3ESDPLM-03P (for input terminal) made by DINKLE ENTERPRISE.
4. One package contains 10 S8T-BUS01 Connectors.
5. One package contains 10 S8T-BUS02 Connectors.

Specifications

■ Ratings/Characteristics

24/12-V Models (Basic Block: S8TS-06024□/S8TS-03012□)

Item			Single operation	Parallel operation
Efficiency			24-V models: 75% min.; 12-V models: 70% min. (with rated input, 100% load)	
Input	Voltage		100 to 240 VAC (85 to 264 VAC)	
	Frequency		50/60 Hz (47 to 63 Hz)	
	Current	100 V input	24-V models: 1.0 A max. 12-V models: 0.7 A max.	24-V models: 1.0 A × (No. of Blocks) max. 12-V models: 0.7 A × (No. of Blocks) max.
		200 V input	24-V models: 0.5 A max. 12-V models: 0.4 A max.	24-V models: 0.5 A × (No. of Blocks) max. 12-V models: 0.4 A × (No. of Blocks) max.
	Power factor		24-V models: 0.9 min.; 12-V models: 0.8 min. (with rated input, 100% load) (See note 3.)	
	Leakage current	100 V input	0.35 mA max.	0.35 mA × (No. of Blocks) max.
		240 V input	0.7 mA max.	0.7 mA × (No. of Blocks) max.
	Inrush current (25°C, cold start) (See note 4.)	100 V input	25 A max.	25 A × (No. of Blocks) max.
		200 V input	50 A max.	50 A × (No. of Blocks) max.
Output (See note 3.)	Voltage adjustment range		24-V models: 22 to 28 V 12-V models: 12 V ±10% (with V.ADJ) (See note 1.)	
	Ripple		2% (p-p) max.	
	Input variation influence		0.5% max. (with 85 to 264 VAC input, 100% load)	
	Load variation influence		2% max. (with rated input, 10% to 100% load)	3% max. (with rated input, 10% to 100% load)
	Temperature variation influence		0.05%/°C max. (with rated input and output)	
	Startup time (See note 4.)		1,000 ms max.	
	Hold time (See note 4.)		20 ms min. (with 100/200 VAC, rated input)	
Additional functions	Overcurrent protection (See note 4.)		105% to 125% of rated load current, inverted L drop type, automatic reset	100% to 125% of rated load current inverted L drop type, automatic reset
	Overvoltage protection (See note 4.)		Yes	
	Parallel operation		Yes, 4 Blocks max.	
	N+1 redundant system		Yes, 5 Blocks max.	
	Series operation		Yes	
	Undervoltage indicator (See note 4.)		Yes (color: red)	
	Undervoltage detection output (See note 4.)		Yes (open collector output), 30 VDC max., 50 mA max.	
Other	Ambient operating temperature (See note 4.)		Operating: Refer to the derating curve in *Engineering Data.* Storage: –25 to 65°C (with no icing or condensation)	
	Ambient humidity		Operating: 25% to 85%; Storage: 25% to 90%	
	Dielectric strength		3.0 kVAC, 50/60 Hz for 1 minute (between all inputs and all outputs; detection current: 20 mA)	
			2.0 kVAC, 50/60 Hz for 1 minute (between all inputs and GR terminal; detection current: 20 mA)	
			1.0 kVAC for 1 minute (between all outputs and GR terminal; detection current: 20 mA)	
	Insulation resistance		100 MΩ min. (between all outputs and all inputs, and between all outputs and GR terminal) at 500 VDC	
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions	
	Shock resistance		150 m/s², 3 times each in ±X, ±Y, and ±Z directions	
	Output indicator		Yes (color: green)	
	Electromagnetic interference		Conforms to FCC Class A, EN50081-1	
	EMI		Conforms to EN50081-1/1992	
	Power factor correction		Conforms to EN61000-3-2, EN61000-3-2 A14	
	EMS		Conforms to EN61000-6-2/1999	
	Approved standards		UL: 508 (Listing; Class 2: Per UL1310), 1950, 1604 (Class I, Division 2, Groups A, B, C, D Hazardous Locations)) cUL: CSA C22.2 No.14, No.213 (Class I, Division 2, Groups A, B, C, D Hazardous Locations), No. 950 (Class 2) (See note 2.) EN/VDE: EN50178 (=VDE0160), 60950 (=VDE0806)	
	Weight		450 g max.	450 g × (No. of Blocks) max.

Note 1. Refer to page B-59 for details on adjusting the output voltage for parallel operation. If set to less than –10%, the undervoltage detection function may operate. Ensure that the output capacity and output current after adjustment do not exceed the rated output capacity and rated output current respectively.

2. Class 2 approval does not apply to parallel operation.

3. The output current is specified at power output terminals.

4. Refer to the explanations of functions on page B-56 for details.

5. Be sure to mount End Plates (PFP-M) on both ends of the Power Supply.

5-V Models (Basic Block: S8TS-02505□)

Item			Single operation
Efficiency (typical)			62% min. (with rated input, 100% load)
Input	Voltage		100 to 240 VAC (85 to 264 VAC)
	Frequency		50/60 Hz (47 to 63 Hz)
	Current	100 V input	0.7 A max.
		200 V input	0.4 A max.
	Power factor		0.8 min. (with rated input, 100% load)
	Leakage current	100 V input	0.35 mA max.
		240 V input	0.7 mA max.
	Inrush current (25°C, cold start) (See note 2.)	100 V input	25 A max.
		200 V input	50 A max.
Output (See note 2.)	Voltage adjustment range		5 V ± 10% (with V. ADJ) (See note 1.)
	Ripple		2% (p-p) max.
	Input variation influence		0.5% max. (with 85 to 264 VAC input, 100% load)
	Temperature variation influence		0.05%/°C max. (with rated input and output)
	Load variation influence		1.5% max. (with rated input, 10% to 100% load)
	Startup time (See note 3.)		1,000 ms max.
	Hold time (See note 3.)		20 ms min. (with 100/200 VAC, rated input)
Additional functions	Overcurrent protection (See note 3.)		105% to 125% of rated load current, inverted L drop type, automatic reset
	Overvoltage protection (See note 3.)		Yes
	Parallel operation		No
	N+1 redundant system		No
	Series operation		Yes (with the external diode)
	Undervoltage indicator (See note 3.)		Yes (color: red)
	Undervoltage detection output (See note 3.)		Yes (open collector output), 30 VDC max., 50 mA max.
Other	Ambient operating temperature (See note 3.)		Operating: Refer to the derating curve in *Engineering Data.* Storage: –25 to 65°C (with no icing or condensation)
	Ambient humidity		Operating: 25% to 85%, Storage: 25% to 90%
	Dielectric strength		3.0 kVAC, 50/60 Hz for 1 minute (between all inputs and all outputs; detection current: 20 mA)
			2.0 kVAC, 50/60 Hz for 1 minute (between all inputs and GR terminal; detection current: 20 mA)
			1.0 kVAC for 1 minute (between all outputs and GR terminal; detection current: 20 mA)
	Insulation resistance		100 MΩ min. (between all outputs and all inputs, and between all outputs and GR terminal) at 500 VDC
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions
	Shock resistance		150 m/s^2, 3 times each in ±X, ±Y, and ±Z directions
	Output indicator		Yes (color: green)
	Electromagnetic interference		Conforms to FCC Class A, EN50081-1
	EMI		Conforms to EN50081-1/1992
	Power factor correction		Conforms to EN61000-3-2, EN61000-3-2A14
	EMS		Conforms to EN61000-6-2/1999
	Approved standards		UL: 508 (Listing), 1950, 1604 (Class I, Division 2, Groups A, B, C, D Hazardous Locations) cUL: CSA C22.2 No.14, No.213 (Class I, Division 2, Groups A, B, C, D Hazardous Locations), No. 950 EN/VDE: EN50178 (=VDE0160), 60950 (=VDE0806)
	Weight		450 g max.

Note 1. If set to less than –10%, the undervoltage detection function may operate. Ensure that the output capacity and output current after adjustment do not exceed the rated output capacity and rated output current respectively.

2. The output current is specified at power output terminals.

3. Refer to the explanations of functions on page B-56 for details.

4. Be sure to mount End Plates (PFP-M) on both ends of the Power Supply.

■ Reference Value

Item	Value	Definition
Reliability (MTBF)	250,000 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 the life of the product.
Life expectancy	10 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.