

# E SERIES ECW-007 TYPE

UL/CSA/TÜV approved

## SPECIFICATIONS AND STANDARDS

PART NO.		ECW-007	
Rated output voltage and current*1	V <sub>1</sub>	5V • 3A	
	V <sub>2</sub>	24V • 6A(Peak current 10A)	
Maximum output power	W	159[Peak current output: 255]	
INPUT CONDITIONS			
Input voltage Eac*2	V	85 to 265[Rating: 100 to 120/200 to 240]	
Input frequency	Hz	47 to 66[Rating: 50 to 60](Single phase)	
Input current	A	2.1typ./3.8max.[AC.100V] 0.9typ./1.6max.[AC.240V]	
Fuse rating	A	6.3 [AC.250V Built-in]	
Surge current	A	12typ./17max.[AC.100V] 31typ./40max.[AC.240V]1st surge current.	
Leakage current	mA	0.6typ./1max.[AC.100V, 60Hz(Electrical Appliance And Material Control Law)] 0.6typ./0.75max.[AC.240V, 60Hz(UL,IEC)]	
Power factor		0.95typ.[AC.100/240V]	
Efficiency	%	100V	77typ.
		240V	80typ.
OUTPUT CHARACTERISTICS			
Output voltage Edc	V	5(V <sub>1</sub> )	24(V <sub>2</sub> )
Voltage variable range Edc	V	Fixed	Fixed
Maximum output current	A	3	6(Peak current 10A, 10s max.)
Minimum output current	A	0	0
Overvoltage threshold Edc	V	5.6 to 6.9	30.1 to 35
Overcurrent threshold	A	3.1min.	10.1min.
Voltage stability	Input variation	%	2max.(0.4typ.)
	Load variation	%	7max.(0.4typ.)[Within the input voltage range]
	Temperature variation	%	16max.(14typ.)[10% to maximum current]
	Drift	%	4max.(1typ.)[Ambient temperature: -10 to +40°C]
	Dynamic load	%/ms	1max.(0.4typ.)
Total variation	%	±10max.(Voltage variation)/5(Reset time)[10% to maximum current sudden load change]	
Ripple Ep-p	mV	±5max.(2typ.)	±10max.(9typ.)
Ripple noise Ep-p	mV	100max.	600max.
Start up time	ms	150max.	800max.
Hold up time	ms	1500max.(1000typ.)/600max.(300typ.)[AC.100/240V]	
	ms	20min.(30typ.)/20min.(35typ.)[AC.100/240V]	

## AUXILIARY FUNCTIONS

Indicator display	No
Overvoltage protection	Voltage shut-down type, recovers upon reset(interval approx. 5min), set value fixed.
Overcurrent protection	Winker operation, automatic recovery.
Remote ON-OFF	No
Remote sensing	No
Parallel operation	Impossible
Series operation	Impossible
Output voltage external variable function	No

## STANDARDS

Safety standards	UL1950, CSA 950-95(C-UL), EN60950(TÜV) approved, Electrical Appliance And Material Control Law compliant.
Noise terminal voltage	FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B compliant.
Input harmonics current requirement	EN61000-3-2 compliant.

## CONSTRUCTIONS

External dimensions	mm	50×95×220[H×W×L]
Weight	kg	0.9typ.
Mounting method		Can be attached to 1 side.
Case material		Frame: Aluminum/Cover: Zinc-plated iron

<sup>\*1</sup> Current rating(maximum output current) is determined -10 to +40°C. Derating is required when used outside this temperature range.

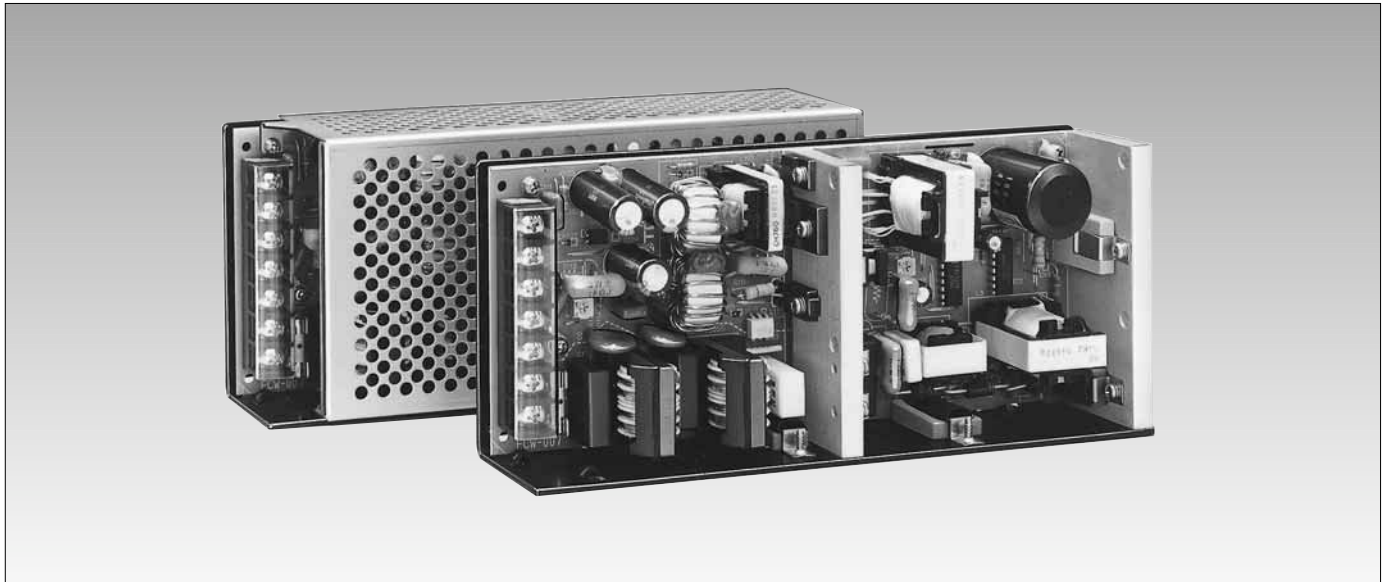
<sup>\*2</sup> The use of input voltage outside of that which is prescribed may result in the power supply specifications not being met or cause damage.

## PRODUCT IDENTIFICATIONS

Input and output style	L-shaped frame type	With cover type
Terminal block	ECW-007D	ECW-007DC
Connector(Vertical)	ECW-007E	ECW-007EC

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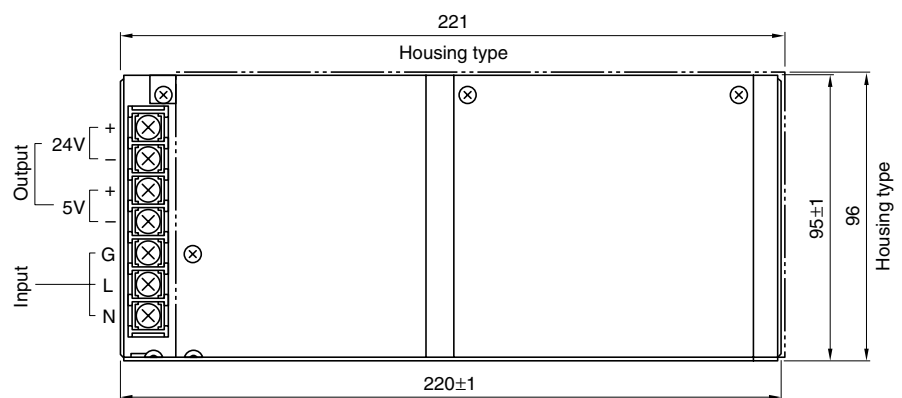
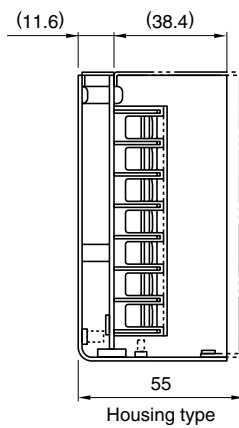
## SHAPES AND DIMENSIONS

### ECW-007TYPE

Dimensions in mm  
±1mm : without specified dimensions  
Third-angle projection

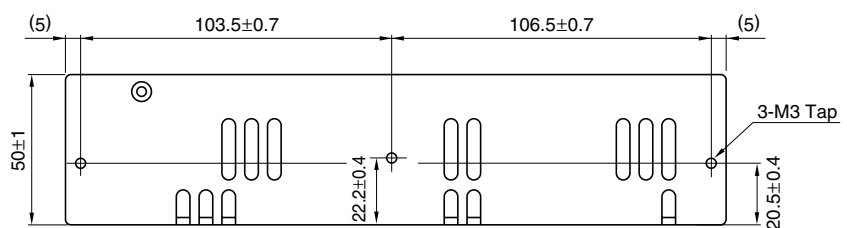
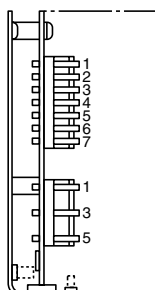
#### ECW-007D

#### ECW-007DC



#### ECW-007E

#### ECW-007EC

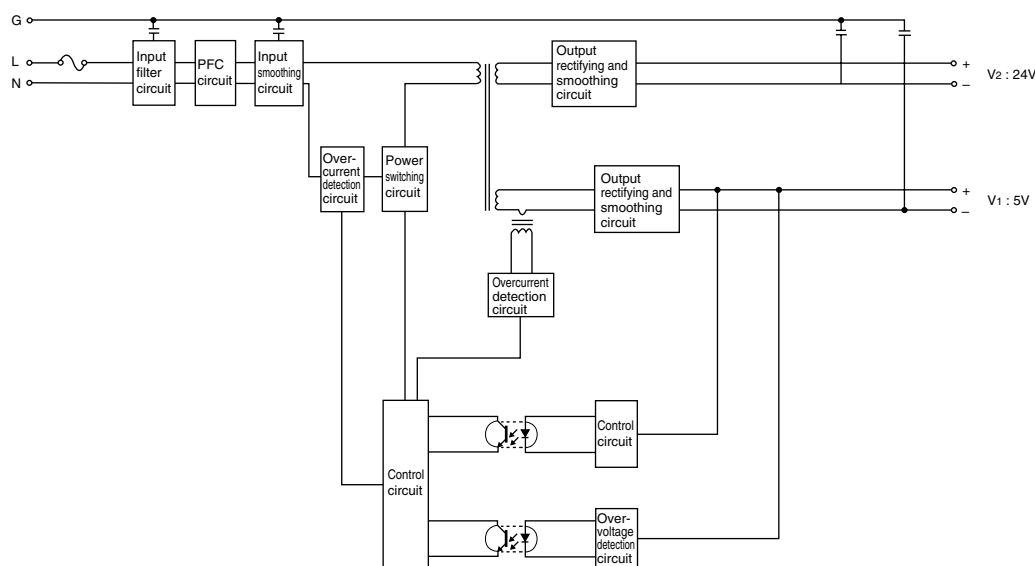


Connector name (Part number)	Manufacturer	Compatible housing	Compatible connector
Input connector	JST	VHR-5N	SVH-21T-P1.1
Output connector	JST	VHR-7N	SVH-21T-P1.1

# Characteristics, Functions, and Applications

## Common Specification Products

### BLOCK DIAGRAM



### COMMON SPECIFICATIONS

#### Temperature and humidity

Temperature range	Operating(°C)	-10 to +60 Please refer to derating curve.
	Operating available(°C)	-20 to -10
	Storage(°C)	-30 to +70
Humidity range	Operating(%)RH	20 to 95[Maximum wet-bulb temperature: 35°C, without dewing]
	Storage(%)RH	

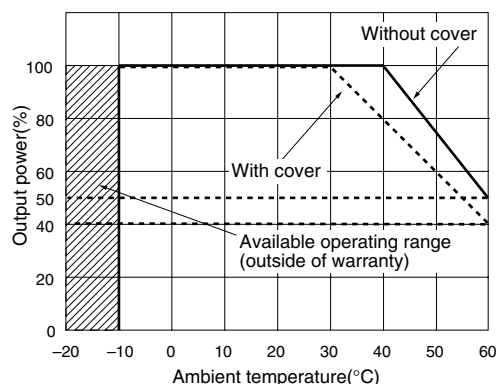
#### Amplitude and vibration

Amplitude	5 to 10Hz	All amplitude 10mm[3 directions, each 1h]
	10 to 200Hz	Acceleration 19.6m/s <sup>2</sup> [2G, 3 directions, each 1h]
Vibration	Acceleration	588m/s <sup>2</sup> [60G, 3 directions, each 3 times]
	Vibration time	11±5ms

#### Withstand voltage and insulation resistance

Withstand voltage	Input terminal to Case( $\frac{\perp}{\perp}$ )	Eac(kV)2.5, 1min[Normal temperature, normal humidity, cutout current 20mA]
	Input terminal to output terminal	Eac(kV)3, 1min[Normal temperature, normal humidity, cutout current 20mA]
	Output terminal to Case( $\frac{\perp}{\perp}$ )	Eac(V)500, 1min[Normal temperature, normal humidity cutout current 100mA]
	Input terminal to Case( $\frac{\perp}{\perp}$ )	
Insulation resistance	Input terminal to output terminal	Edc(V)500, 100MΩ min. [Normal temperature, normal humidity]
	Output terminal to Case( $\frac{\perp}{\perp}$ )	

### OUTPUT POWER-AMBIENT TEMPERATURE(DERATINGS)



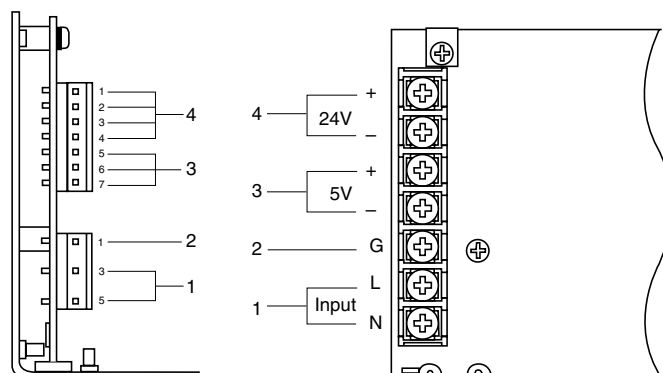
### LINEUP

Part No.	Input/output interface	External shape
ECW-007D	Terminal	Open frame
ECW-007DC	Terminal	Cover type
ECW-007E	Connector	Open frame
ECW-007EC	Connector	Cover type

# Characteristics, Functions, and Applications

## Operating Instructions

### TERMINAL DESIGNATIONS AND FUNCTIONS

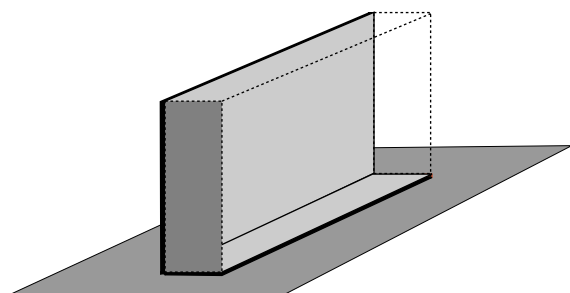


- 1 AC input terminals(L, N)**  
Connect to AC.100V or 200V single phase input line.
- 2 Frame ground terminal(G)**  
Connect to earth ground.
- 3 DC output terminals(5V, +, -)**  
Connect to load.
- 4 DC output terminals(24V, +, -)**  
Connect to load.

### INPUT AND OUTPUT TERMINALS

	Terminal No.	Voltage
Output connector	1	+24V
	2	+24V
	3	-24V
	4	-24V
	5	+5V
	6	-5V
	7	-5V
Input connector	1	G(Frame ground)
	3	L(ACin)
	5	N(ACin)

### INSTALLATIONS



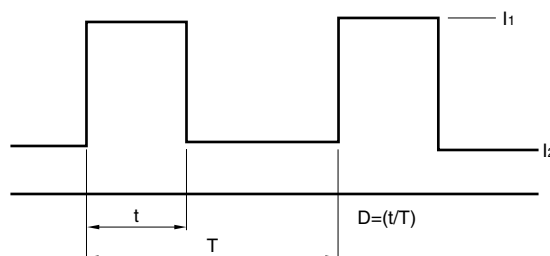
Single-side installation in vertical direction

### NOTES ON USE

**It is possible to flow peak current as 24V load current.**

A value exceeding a continuous rated value should be used under the following conditions.

In case of a use not under the conditions, the power supply may be damaged.



Peak current value:  $I_1 \leq 10A$

Time for peak current value:  $t \leq 10\text{sec.}$

Effective current:  $\sqrt{D \times I_1^2 + (1-D) \times I_2^2} \leq 6A$

**For air cooling without blower, install the power supply so as to cause a thermal convection.**

In addition, provide a minimum 10mm distance between respective surfaces of the power supply and surrounding equipment or the like.

**This product has an internal adjustment trimmer.**

Please do not touch it that can result in damage caused by any change of the setting.