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Power Supplies

ECX-001, -003, -005, -007 Series

AC Input

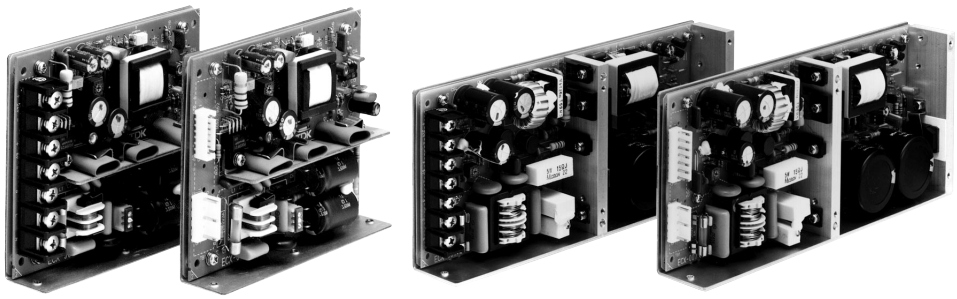
Multi Output, General-Purpose

FEATURES

- Switches between AC.100/200V.
- 5V and 24V outputs are isolated from one another.
- Increased peak current for 24V output.
- Outstanding for pulse load, mechanical drive applications.
- Small and light weight.

PART NUMBERS AND RATINGS

Part No.	Maximum output power(W) [Peak]	Output current(A)		
		5V	24V	24V peak[10s min.]
ECX-001	29[41]	0 to 1	0 to 1	1.5
ECX-003	43.5[79.5]	0 to 1.5	0 to 1.5	3
ECX-005	82[130]	0 to 2	0 to 3	5
ECX-007	159[255]	0 to 3	0 to 6	10



⚠ Specifications which provide more details for the proper and safe use of the described product are available upon request.

All specifications are subject to change without notice.

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Power Supplies

ECX-001, -003, -005, -007 Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

29W TYPE(Peak current output: 41W)

Open frame type Terminal strip:ECX-001A*/Vertical connector:ECX-001B/Lateral connector: ECX-001C

L-shape frame type Terminal strip:ECX-001D/Vertical connector:ECX-001E/Lateral connector: ECX-001F

*ECX-001A is a standard product. Other items are special order products.

Part No.			ECX-001		
Output voltage, current*1		V_1	5V • 1A		
		V_2	24V • 1A[Peak current 1.5A]		
Maximum output power		W	29[Peak current output:41]		
Input requirements					
Input voltage Eac*2		V	85 to 115[Rating:100](The input range of 170 to 253V[Rating: 200] is possible by internal switching.)		
Input frequency		Hz	47 to 66[Single phase]		
Input current		A	1max.[25°C, input and output ratings]		
Fuse rating		A	3[Internal]		
Surge current*3		A	50max.[25°C, cold start]		
Leakage current		mA	1max.[25°C, input and output ratings]		
Efficiency		%	75typ.		
Output characteristics					
Output voltage		V	5[V_1]	24[V_2]	
Voltage variable range		V	Fixed	Fixed	
Maximum output current		A	1	1[Peak current 1.5A, 10s max.]	
Minimum output current		A	0	0	
Voltage stability	Input variation	%	±1max.	±3.5max.	[Within the input voltage range V_2:10*5 to 100% 0 to +40°C] Total variation ±5max.(24V:±10max.)
	Load variation*4	%	±2max.	±5max.	
	Temperature variation	%	±1max.	±2max.	
	Drift	%	±0.5max.	±1.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]	
	Dynamic load	V/ms	—	±2.4(Voltage variation)/5(Reset time)[0.1 to 1.5A sudden load change]	
Ripple Ep-p*6		mV	100max.	600max.	
Ripple noise Ep-p*6		mV	150max.	800max.	
Start up time		s	1.5max.[Rise time: 20ms max.]		Normal temperature, input and output ratings, load capacitance 100µF max.
Hold up time		ms	20min.		
Accessory equipment					
Operation indicator			None		
Overvoltage protection			V_1, V_2 protected by built-in overvoltage prevention switch inhibition. Recovery when input reset(restart requires roughly 5min wait).		
Overcurrent protection*7			V_1 alone uses voltage lowering. V_2 entirely shuts off output upon overcurrent detection or signal lamp operation(restart requires roughly 5min wait).		
Remote ON-OFF			None		
Remote sensing			None		
Current balance			None		
Standards					
Safety standards			—		
Noise terminal voltage			—		
Construction					
External dimensions H×W×L		mm	Open frame type 24×93×119 L-shape frame type 25×95×120		
Weight		g	300max.		
Mounting method			Can be attached to 2 sides(Without frame type can be attached to 1 side).		
Case material			Without cover(With frame also available)		
Input and output cables			—		

*1 Rated output current was determined at 40°C. Use 75% load derating at 50°C, 50% load derating at 60°C.
V_2 peak current should occur within a less than 10s time interval. Effective current should be kept below the current rating.

*2 The product is shipped set for 200V input. For use of the product with 100V input, attach the input voltage switching connector.

*3 A power thermistor is used as the current surge control element.

*4 Determined for 10 to 100% load variation range.

*5 V_2 output voltage becomes 30V max. when V_2 output drops below 10%.

*6 Ripple and noise were determined at 0 to +40°C and rated input and output conditions.

*7 Output overcurrent protection is only effective during a short.

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Power Supplies

ECX-001, -003, -005, -007 Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

43.5W TYPE(Peak current output: 79.5W)

Open frame type Terminal strip:ECX-003A*/Vertical connector:ECX-003B/Lateral connector: ECX-003C

L-shape frame type Terminal strip:ECX-003D/Vertical connector:ECX-003E/Lateral connector: ECX-003F

*ECX-003A is a standard product. Other items are special order products.

Part No.		ECX-003			
Output voltage, current*1	V_1	5V • 1.5A			
	V_2	24V • 1.5A[Peak current 3A]			
Maximum output power	W	43.5[Peak current output:79.5]			
Input requirements					
Input voltage Eac*2	V	85 to 115[Rating:100](The input range of 170 to 253V[Rating: 200] is possible by internal switching.)			
Input frequency	Hz	47 to 66[Single phase]			
Input current	A	1.5max.[25°C, input and output ratings]			
Fuse rating	A	3[Internal]			
Surge current*3	A	50max.[25°C, cold start]			
Leakage current	mA	1max.[25°C, input and output ratings]			
Efficiency	%	77typ.			
Output characteristics					
Output voltage	V	5[V_1]	24[V_2]		
Voltage variable range	V	Fixed	Fixed		
Maximum output current	A	1.5	1.5[Peak current 3A, 10s max.]		
Minimum output current	A	0	0		
Voltage stability — Input variation	%	±1max.	±3.5max.	[Within the input voltage range V_2:10*5 to 100% 0 to +40°C]	Total variation ±5max.(24V:±10max.)
Voltage stability — Load variation*4	%	±2max.	±5max.		
Voltage stability — Temperature variation	%	±1max.	±2max.		
Voltage stability — Drift	%	±0.5max.	±1.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
Voltage stability — Dynamic load	V/ms	—	±2.4(Voltage variation)/5(Reset time)[0.3 to 3A sudden load change]		
Ripple Ep-p*6	mV	100max.	600max.		
Ripple noise Ep-p*6	mV	150max.	800max.		
Start up time	s	1.5max.[Rise time: 20ms max.]		Normal temperature, input and output ratings, load capacitance 100µF max.	
Hold up time	ms	20min.			
Accessory equipment					
Operation indicator		None			
Overvoltage protection		V_1, V_2 protected by built-in overvoltage prevention switch inhibition. Recovery when input reset(restart requires roughly 5min wait).			
Overcurrent protection*7		V_1 alone uses voltage lowering. V_2 entirely shuts off output upon overcurrent detection or signal lamp operation(restart requires roughly 5min wait).			
Remote ON-OFF		None			
Remote sensing		None			
Current balance		None			
Standards					
Safety standards		—			
Noise terminal voltage		—			
Construction					
External dimensions H×W×L	mm	Open frame type 29×93×129 L-shape frame type 30×95×130			
Weight	g	400max.			
Mounting method		Can be attached to 2 sides(Without frame type can be attached to 1 side).			
Case material		Without cover(With frame also available)			
Input and output cables		—			

*1 Rated output current was determined at 40°C. Use 75% load derating at 50°C, 50% load derating at 60°C.
V_2 peak current should occur within a less than 10s time interval. Effective current should be kept below the current rating.

*2 The product is shipped set for 200V input. For use of the product with 100V input, attach the input voltage switching connector.

*3 A power thermistor is used as the current surge control element.

*4 Determined for 10 to 100% load variation range.

*5 V_2 output voltage becomes 30V max. when V_2 output drops below 10%.

*6 Ripple and noise were determined at 0 to +40°C and rated input and output conditions.

*7 Output overcurrent protection is only effective during a short.

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Power Supplies

ECX-001, -003, -005, -007 Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

82W TYPE(Peak current output: 130W)

L-shape frame type　Terminal strip:ECX-005D*/Vertical connector:ECX-005E/Lateral connector: ECX-005F

*ECX-005D is a standard product. Other items are special order products.

Part No.		ECX-005			
Output voltage, current*1	V_1	5V • 2A			
	V_2	24V • 3A[Peak current 5A]			
Maximum output power	W	82[Peak current output:130]			
Input requirements					
Input voltage Eac*2	V	85 to 115[Rating:100](The input range of 170 to 253V[Rating: 200] is possible by internal switching.)			
Input frequency	Hz	47 to 66[Single phase]			
Input current	A	2.5max.[25°C, input and output ratings]			
Fuse rating	A	5[Internal]			
Surge current*3	A	50max.[25°C, cold start]			
Leakage current	mA	1max.[25°C, input and output ratings]			
Efficiency	%	82typ.			
Output characteristics					
Output voltage	V	5[V_1]	24[V_2]		
Voltage variable range	V	Fixed	Fixed		
Maximum output current	A	2	3[Peak current 5A, 10s max.]		
Minimum output current	A	0	0		
Voltage stability	Input variation	%	±1max.	±3.5max.	[Within the input voltage range V_2:10*5 to 100% 0 to +40°C] Total variation ±5max.(24V:±10max.)
	Load variation*4	%	±2max.	±8max.	
	Temperature variation	%	±1max.	±2max.	
	Drift	%	±0.5max.	±1.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]	
	Dynamic load	V/ms	—	±2.4(Voltage variation)/5(Reset time)[0.5 to 5A sudden load change]	
Ripple Ep-p*6		mV	100max.	600max.	
Ripple noise Ep-p*6		mV	150max.	800max.	
Start up time		s	1.5max.[Rise time: 20ms max.]		Normal temperature, input and output ratings, load capacitance 100μF max.
Hold up time		ms	20min.		
Accessory equipment					
Operation indicator		None			
Overvoltage protection		Only V_1 protected by built-in overvoltage prevention switch inhibition. Recovery when input reset(restart requires roughly 5min wait).			
Overcurrent protection*7		Entirely shuts off output upon overcurrent detection(load shorted) or signal lamp operation.			
Remote ON-OFF		None			
Remote sensing		None			
Current balance		None			
Standards					
Safety standards		—			
Noise terminal voltage		—			
Construction					
External dimensions H×W×L		mm	30×95×160		
Weight		g	500max.		
Mounting method		Can be attached to 2 sides.			
Case material		Without cover(With frame)			
Input and output cables		—			

*1 Rated output current was determined at 40°C. Use 75% load derating at 50°C, 50% load derating at 60°C.
V_2 peak current should occur within a less than 10s time interval. Effective current should be kept below the current rating.

*2 The product is shipped set for 200V input. For use of the product with 100V input, attach the input voltage switching connector.

*3 A power thermistor is used as the current surge control element.

*4 Determined for 10 to 100% load variation range.

*5 V_2 output voltage becomes 30V max. when V_2 output drops below 10%.

*6 Ripple and noise were determined at 0 to +40°C and rated input and output conditions.

*7 Output overcurrent protection is only effective during a short.

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Power Supplies

ECX-001, -003, -005, -007 Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

159W TYPE(Peak current output: 255W)

L-shape frame type　Terminal strip:ECX-007D*/Vertical connector:ECX-007E/Lateral connector: ECX-007F

*ECX-007D is a standard product. Other items are special order products.

Part No.		ECX-007			
Output voltage, current*1	V_1	5V • 3A			
	V_2	24V • 6A[Peak current 10A]			
Maximum output power	W	159[Peak current output:255]			
Input requirements					
Input voltage Eac*2	V	85 to 115[Rating:100](The input range of 170 to 253V[Rating: 200] is possible by internal switching.)			
Input frequency	Hz	47 to 66[Single phase]			
Input current	A	5max.[25°C, input and output ratings]			
Fuse rating	A	8[Internal]			
Surge current*3	A	50max.[25°C, input and output ratings, 1st surge current reset after roughly 30s min.]			
Leakage current	mA	1max.[25°C, input and output ratings]			
Efficiency	%	85typ.			
Output characteristics					
Output voltage	V	5[V_1]	24[V_2]		
Voltage variable range	V	Fixed	Fixed		
Maximum output current	A	3	6[Peak current 10A, 10s max.]		
Minimum output current	A	0	0		
Voltage stability — Input variation	%	±1max.	±3.5max.	[Within the input voltage range V_2:10*4 to 100% 0 to +40°C]	Total variation ±5max.(24V:±10max.)
Voltage stability — Load variation*3	%	±2max.	±8max.		
Voltage stability — Temperature variation	%	±1max.	±2max.		
Voltage stability — Drift	%	±0.5max.	±1.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
Voltage stability — Dynamic load	V/ms	—	±2.4(Voltage variation)/5(Reset time)[1 to 10A sudden load change]		
Ripple Ep-p*5	mV	100max.	600max.		
Ripple noise Ep-p*5	mV	150max.	800max.		
Start up time	s	1.5max.[Rise time: 20ms max.]		Normal temperature, input and output ratings, load capacitance 100μF max.	
Hold up time	ms	20min.			
Accessory equipment					
Operation indicator		None			
Overvoltage protection		Only V_1 protected by built-in overvoltage prevention switch inhibition. Recovery when input reset(restart requires roughly 5min wait).			
Overcurrent protection*6		Entirely shuts off output upon overcurrent detection(load shorted) or signal lamp operation.			
Remote ON-OFF		None			
Remote sensing		None			
Current balance		None			
Standards					
Safety standards		—			
Noise terminal voltage		—			
Construction					
External dimensions H×W×L	mm	35×95×220			
Weight	g	700max.			
Mounting method		Can be attached to 2 sides.			
Case material		Without cover(With frame)			
Input and output cables		—			

*1 Rated output current was determined at 40°C. Use 75% load derating at 50°C, 50% load derating at 60°C.
V_2 peak current should occur within a less than 10s time interval. Effective current should be kept below the current rating.

*2 The product is shipped set for 200V input. For use of the product with 100V input, attach the input voltage switching connector.

*3 Determined for 10 to 100% load variation range.

*4 V_2 output voltage becomes 30V max. when V_2 output drops below 10%.

*5 Ripple and noise were determined at 0 to +40°C and rated input and output conditions.

*6 Output overcurrent protection is only effective during a short.

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Power Supplies

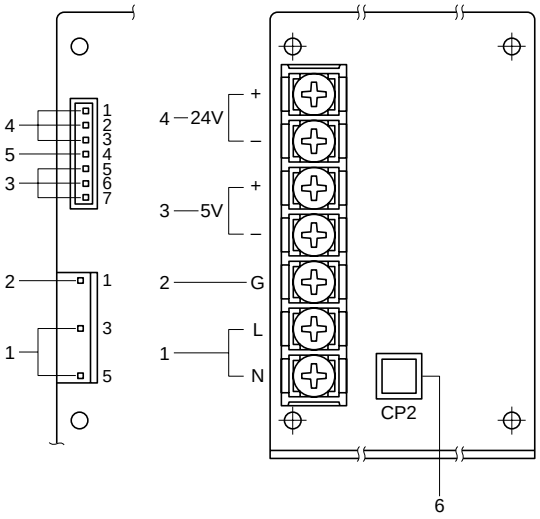
ECX-001, -003, -005, -007 Series

AC Input

Multi Output, General-Purpose

TERMINAL DESIGNATIONS AND FUNCTIONS

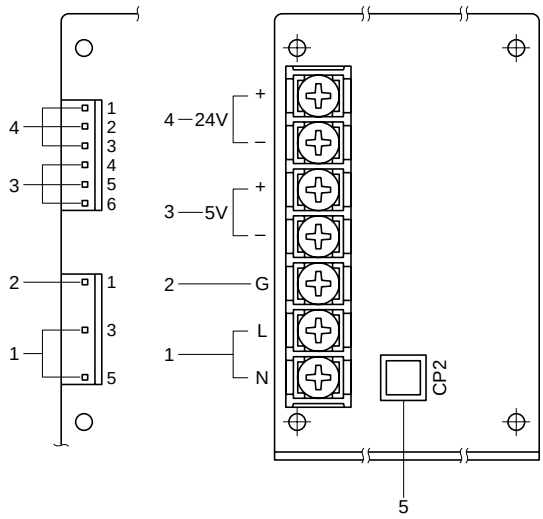
ECX-001



Output connector	4	1	24V+	(Ref.) Housing XHP-7(JST) Adapter contact SXH-001T-P0.6
		2	24V+	
		3	24V–	
	5	4	NC	
	3	5	5V+	
		6	5V–	
		7	5V–	
Input connector	2	1	G	(Ref.) Housing VHR5N(JST) Adapter contact SVH-21T-P1.1
	1	3	L	
		5	N	

Terminal No. 1: AC input terminals(L, N)
Connect to AC.100 or 200V single phase power lines. The product is shipped set for AC.200V input. If AC.100V power supply is to be used, attach the input voltage switching connector to CP2.
Terminal No. 2: Ground terminal(G)
Connect to earth ground.
Terminal No. 3: DC output terminals(5V, +, –)
Connect to load.
Terminal No. 4: DC output terminals (24V, +, –)
Connect to load.
Terminal No. 5: Not connected(NC)
Do not connect. This should not be used.
Terminal No. 6: Input voltage switching connector(CP2)
This is used for switching between input AC voltages.
No CP2 connector: 200V input
CP2 connector in place:100V input

ECX-003, 005



Output connector	4	1	24V+	(Ref.) Housing VHR-6N(JST) Adapter contact SXH-21T-P1.1
		2	24V+	
		3	24V–	
	3	4	5V+	
		5	5V–	
		6	5V–	
Input connector	2	1	G	(Ref.) Housing VHR-5N(JST) Adapter contact SVH-21T-P1.1
	1	3	L	
		5	N	

Terminal No. 1: AC input terminals(L, N)
Connect to AC.100 or 200V single phase power lines. The product is shipped set for AC.200V input. If AC.100V power supply is to be used, attach the input voltage switching connector to CP2.
Terminal No. 2: Ground terminal(G)
Connect to earth ground.
Terminal No. 3: DC output terminals(5V, +, –)
Connect to load.
Terminal No. 4: DC output terminals (24V, +, –)
Connect to load.
Terminal No. 5: Not connected(NC)
Do not connect. This should not be used.
Terminal No. 6: Input voltage switching connector(CP2)
This is used for switching between input AC voltages.
No CP2 connector: 200V input
CP2 connector in place:100V input

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Power Supplies

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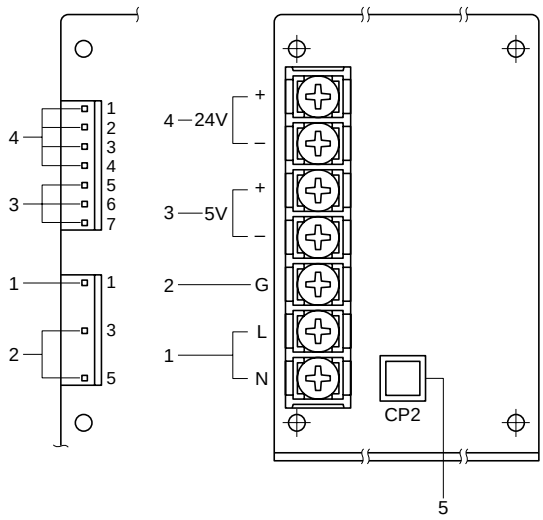
AC Input

Multi Output, General-Purpose

TERMINAL DESIGNATIONS AND FUNCTIONS

ECX-007



Output connector	4	1	24V+	(Ref.) Housing VHR-7N(JST) Adapter contact SVH-21T-P1.1
		2	24V+	
		3	24V–	
		4	24V–	
	3	5	5V+	
		6	5V–	
		7	5V–	
Input connector	2	1	G	(Ref.) Housing VHR-5N(JST) Adapter contact SVH-21T-P1.1
	1	3	L	
		5	N	

Terminal No. 1: AC input terminals(L, N)
Connect to AC.100 or 200V single phase power lines. The product is shipped set for AC.200V input. If AC.100V power supply is to be used, attach the input voltage switching connector to CP2.

Terminal No. 2: Ground terminal(G)
Connect to earth ground.

Terminal No. 3: DC output terminals(5V, +, –)
Connect to load.

Terminal No. 4: DC output terminals (24V, +, –)
Connect to load.

Terminal No. 5: Input voltage switching connector(CP2)
This is used for switching between input AC voltages.
No CP2 connector: 200V input
CP2 connector in place:100V input

⚠ Specifications which provide more details for the proper and safe use of the described product are available upon request.
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