Bi-directional DC-DC Converter

EZA11K-320240FC

TDK-Lambda

SPECIFICATIONS

	Model Name / Item			EZA11K-320240FC	
				LVDC (Battery side)	**HVDC (Grid side)**
1	Rated Voltage		-	240VDC	320VDC
2	Voltage Range	(*1,*2)	-	150VDC - 300VDC	240VDC - 400VDC
3	Rated Current		-	±45.8A	±34.4A
4	Constant Current Setting Range	(*1,*2)	-	1.0A - 50A	1.0A - 40A
5	Maximum Output Power		-	±11,000W	±11,000W
6	Maximum Current			±50A	±40A
7	Efficiency (typ)	(*3)	-	95%	95%
8	Required Pre-charge Voltage	(*1)	-	More than output lower limit voltage	More than output lower limit voltage
9	Inrush Current (typ)	(*4)	-	3.6A	3.6A
10	Maximum Line Regulation		-	1.2V	1.6V
11	Maximum Load Regulation		-	2.4V	3.2V
12	Maximum Temperature Regulation		-	1.5V	2.0V
13	Output Ripple and Noise		-	Less than 3Vp-p	Less than 4Vp-p
14	Sink Current (typ)	(*5)	-	1.6A	1.2A
Protection					
1	Output Over Current Protection (typ)	(*6,*7)	-	70A (Output shut down)	60A (Output shut down)
2	Over Power Protection (typ)	(*6)	-	12,000W (Constant power)	12,000W (Constant power)
3	Input Current Limitation (typ)	(*6)	-	52A(Constant current)	42A(Constant current)
4	Over Voltage Protection	(*2)	-	Possible (Setting range : 144V - 306V)	Possible (Setting range : 230V - 410V)
5	Under Voltage Protection	(*2)	-	Possible (Setting range : 144V - 306V)	Possible (Setting range : 230V - 410V)
Function					
1	Remote ON/OFF		-	Possible (Control via RS-485 or Extra signal)	
2	Remote Reset		-	Possible (Latch off via RS-485, RESET SW or External Signal)	
3	External Signal		-	RUN : Operate at short, Stop at open STOP : Stop at falling edge CHRG : Change function by Operation mode (*9) ALMCLR : Alarm clear and Run at rising edge ALM : Open under Alarm condition（Open Drain） PG : Short under Operation（Open Drain） 5Vs : 5V Output (5V, 0.2A) 24Vi : 24V Input for RS-485 communication	
4	Parallel operation	(*8)	-	Possible (Droop method)	
External Function (RS-485)					
1	Voltage Setting Accuracy		-	Less than ±6.0V	
2	Current Setting Accuracy		-	Less than ±1.0A	
3	Voltage Setting Resolution		-	Less than 0.6V	
4	Current Setting Resolution		-	Less than 100mA	
5	Voltage Reading Accuracy		-	Less than ±6.0V	
6	Current Reading Accuracy		-	Less than ±1.0A	
7	Voltage Reading Resolution		-	Less than 0.6V	
8	Current Reading Resolution		-	Less than 100mA	
9	RS-485 Baud Rate		-	19.2kbps / 33.6kbps / 57.6kbps (Set by DIP-SW)	
10	RS-485 Maximum Connection		-	14	

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SPECIFICATIONS

Model Name Item		EZA11K-320240FC	
		LVDC (Battery side)	**HVDC (Grid side)**
Environmental			
1 Operating Temperature	-	-10°C - +50°C	
2 Operating Humidity	-	30 - 85%RH (No Condensing)	
3 Storage Temperature	-	-20°C - +70°C	
4 Storage Humidity	-	20 - 85%RH (No Condensing)	
5 Vibration	-	No Operation, 10-55Hz (Sweep 1min) 19.6m/s^2 Constant, X, Y, Z Each Direction 1hour	
6 Shock	-	196.1m/s^2 maximum	
7 Cooling	-	Forced Air Cooling by built-in FAN (Air Intake)	
8 Installation Location	-	Indoor use	
9 Altitude	-	Less than 3,000m	
Isolation			
1 Withstand Voltage	-	Primary(320V) - Secondary(240V) : 2.2kVAC(50mA) 1min Primary(320V) - Signals : 3kVAC(50mA) 1min Secondary(240V) - Signals : 3kVAC(50mA) 1min Primary(320V) - Chassis : 2kVAC(50mA) 1min Secondary(240V) - Chassis : 2kVAC(50mA) 1min Signals - Chassis : 400VAC(100mA) 1min	
2 Insulation Resistance	-	Primary(320V) - Chassis More than 100MΩ at 1kVDC 25°C, 70%RH Secondary(240V) - Chassis More than 100MΩ at 1kVDC 25°C, 70%RH Signals - Chassis More than 100MΩ at 500VDC 25°C, 70%RH	
Safety			
1 Safety	-	Approved by UL62368-1, CSA62368-1, EN62368-1. Approved by UL60950-1, CSA60950-1, EN60950-1.	
Physical Characteristics			
1 Weight	-	Less than 20 kg	
2 Size (W x H x D)	mm	422.8 x 43.6 x 530 (Refer to outline drawing)	
1 PCB Coating materials	-	HumiSeal 1B59LU	
2 PCB Coating areas	-	Mounting surface and solder surface of six internal boards. (Excluding discrete parts,screw holes,and connectors)	
3 Cooling Fan	-	High speed, dustproof and long life	

Please read instruction manual Carefully, before using the unit.

=Notes=

*1. Please refer to Derating Curve.

*2. It can be set via RS-485.

*3. Ta=25°C, rated voltage and rated current.

*4. Not applicable for the inrush current to Noise filter for less than 0.2ms.

*5. Current sink appear when applied voltage is greater than output target voltage.

*6. Parameter is fixed.

*7. Shut down method, manual reset.(Latch off via RS-485, RESET SW or External Signal)

*8. Droop ratio can be set via RS-485.

*9. Heteronomy CV mode : Generate at short, Regenerate at open.

   Grid Autonomy CV mode : Heteronomy Generate at Short, Autonomy at open.

   Battery Autonomy mode : No function.

Item	Model Name		Operation Mode (*10)
	EZA11K-320240FC		
Heteronomy CV mode			
1 Operation mode	-		Output voltage control at Generation and Regeneration.
2 Power Conversion Direction State Method	-		External Signal CHRG or control via (RS-485)
3 LVDC CC at Regeneration	-		Possible (Control LVDC current constant).
4 LVDC, HVDC 0V Ramp up (*12)	-		Possible
5 Battery Over Charge Protection (*13)	-		Possible
6 Battery Over Discharge Protection (*13)	-		Possible
Grid Autonomy CV mode			
1 Power Conversion mode	-		Control HVDC voltage constant.
2 Dead Zone set (*13)	-		Possible
3 LVDC, HVDC 0V Ramp up (*12)	-		Possible
4 Battery CC mode (*13)	-		Possible (Control battery side current with constant current mode)
5 Forced Charge mode (*11)	-		Possible (Change to Heteronomy CV mode)
6 Battery Over Charge Protection (*13)	-		Possible
7 Battery Over Discharge Protection (*13)	-		Possible
Battery Autonomy CV mode			
1 Power Conversion mode	-		Control LVDC voltage constant.
2 LVDC, HVDC 0V Ramp up (*12)	-		Possible

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=Note=

*10. Control mode can be set via RS-485 or DIP-SW setting.

*11. It can be changed by External Signal.

*12. It can start up under pre-charge voltage (LVDC : less than 150V, HVDC : less than 240V).

*13. It can be set via RS-485.

Direction of Generation and Regeneration

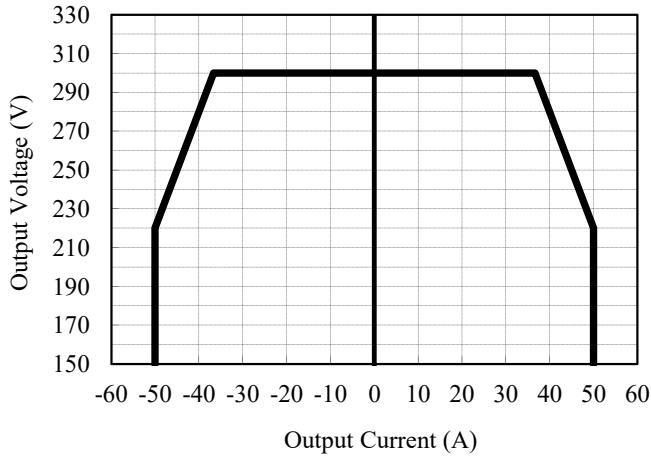# Derating Curve

LVDC Output Voltage vs Output Current Derating
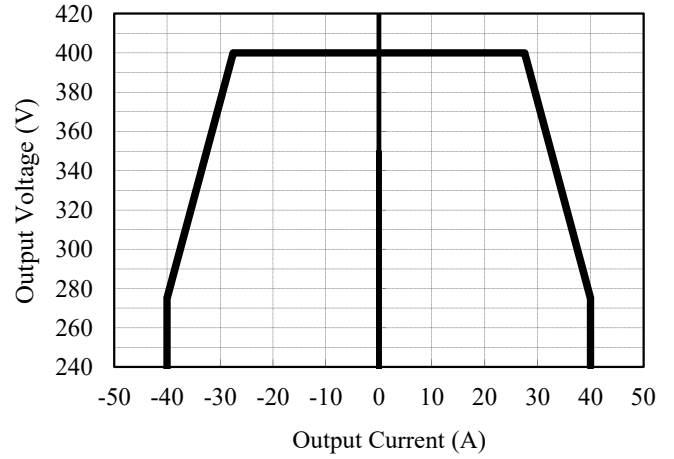
HVDC Output Voltage vs Output Current Derating

Fig. 1

Fig. 2

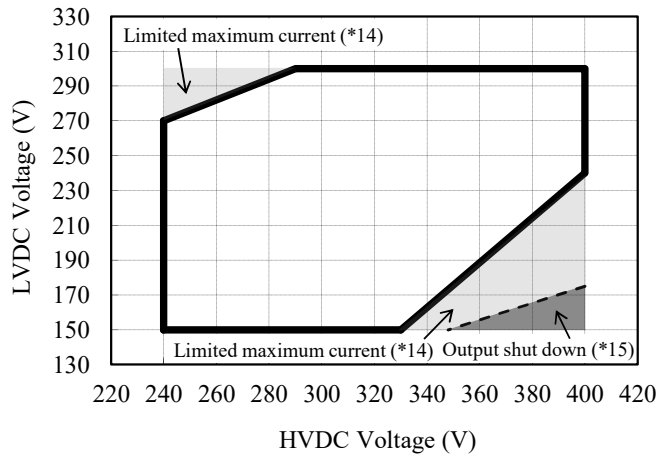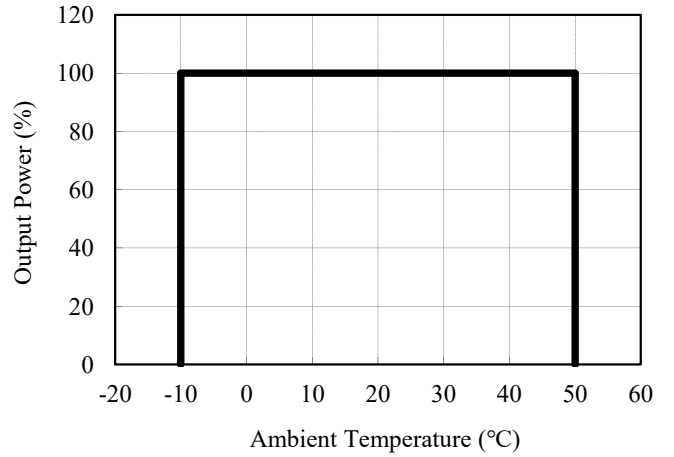HVDC Voltage vs LVDC Voltage Derating

Output Derating

Fig. 3

Fig. 4

Please read instruction manual Carefully, before using.

=Note=

*14. Limit maximum current by half (LVDC: 25.0A, HVDC: 20.0A).

*15. Output shut down.