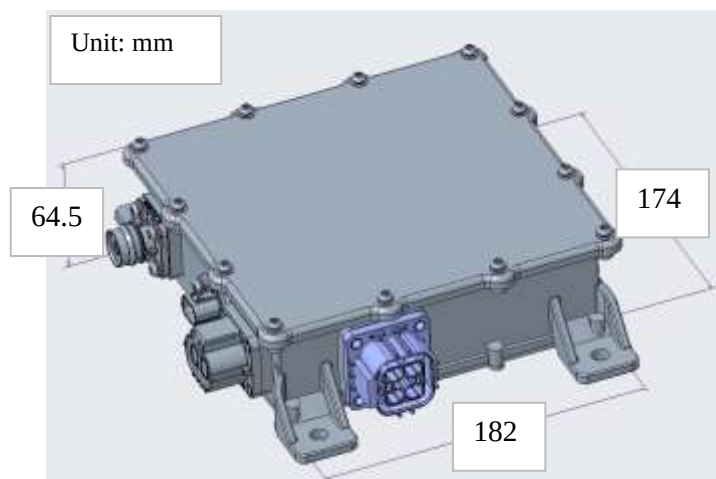




450-950V 3KW DC/DC Converter -Liquid Model No. ATTD3K800S24W



Mounting Dimensions(mm): 182 x 174 x 64.5

Features

- 1 Output Power: 3KW
- 2 Input Voltage Range(DC): 450~950V $\pm$ 10V
- 3 Output Voltage Range(DC): 21~32V
- 4 Rated Current: 125 A
- 5 Dimensions(mm): 220 x 179 x 63
- 6 Weight(KG): $\leq$ 4
- 7 Cooling System: Liquid flow $\geq$ 8L/min
- 8 IP Rating: IP67
- 9 CAN compatibility: CAN2.0 & CANFD Supported
- 10 Enclosure: Aluminum alloy
- 11 Pre-charge & isolated: Supported
- 12 Software: Digital software design
- 13 AUTOSAR BSW : Integrated CAN Stack (AUTOSAR compliant)
- 14 Online Upgrade & Fault Diagnosis: Supported

Specification

Description	Technical Specification	Remark
Rated Output Power (KW)	3	Peak power: 3KW
Input Voltage Range (VDC)	450~950	
Rated Output Voltage (VDC)	24	Voltage Range: 21-32Vdc Adjustable
Rated Output Current(A)	125	Peak Output Current: 125 A
Efficiency	$\geq$ 94%	Rated input voltage, load $>$ 30%
Output Voltage Ripple	$\leq$ 500mV _{PK-PK}	
Output Voltage Accuracy	$\pm$ 1%	
Wakeup Method	KL15(hardwire)	
Communication Method	CAN-BUS J1939	
Quiescent Current	$\leq$ 2mA	Battery current will be consumed in sleep/standby mode
Protection Characteristics	Input OVP/UVP, output OVP/UVP, input anti-reverse connection, output short circuit protection, OCP, OTP	
EMC	GB/T 18655-2010	



950V 3KW DC/DC Converter -Liquid Model No. ATTD3K750S24W

Operating Environment

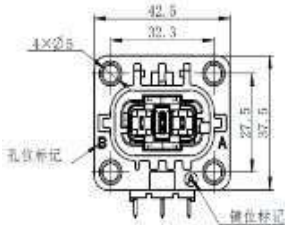
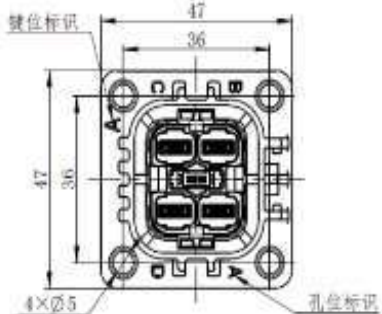
The operating environment conditions of this assembly are as follows:

Items	Descriptions		Remark
1.	Operating Temperature(°C)	-40~85	Coolant inlet temperature Power reduction when temperature ≥ 95
2.	Storage Temperature(°C)	-40~95	Power supply does not turn
3.	relative humidity(%RH)	5~95	No condensation, no frost
4.	Protection level	IP67	
5.	Cooling method	Liquid Cooling	
6.	Vibration level	Meet QC /T895-2011	
7.	Noise level(dB)	65	Meet QC /T895-2011
8.	Salt spray level	Meets QC/T2423.17-2011	
9.	Altitude(M)Max	5000	GB/T16935.1-2008
10.	Fall	Wiring harness according to QC/T417.1-2001 Housing according to GB/T 2423.8-1995	Appearance, structure and performance are normal

Connector Model

Position	Function	Brand	Socket Model	Plug Model
1	Signal control	Sumitomo 6188-6277	6188-6277	
2	HV DC input		EVH2CC-N2ZJ-BA-01	
3	Output +		EVH2CC-N4ZJ-BA	
4	Output -			

Interface Definition

Signal Control(1)		HV DC Input(2)		Output Positive(3)	
					
1	KL30	A	Input +	A	Output +
2	KL15			B	PTC-(can be deleted)
3-6	NC(RESERVE)	B	Input -	C	PTC+(can be deleted)
7	CAN H			D	Output -
8	CAN L				



Reference Standards

No.	Standard/Document No.	Standard/File Name
1	GB/T 24347-2009	Electric vehicle DC/DC converter
2	GB / T 18488.1-2015	Motors and controllers for electric vehicles Part 1: Technical requirements
3	GB/T 18384.2-2015	Safety requirements for electric vehicles Part 2: Functional safety and fault protection
4	GB/T 18384.3-2015	Safety requirements for electric vehicles Part 3: Protection of personnel against electric shock
5	GB/T 18487.1-2015	Electric vehicle conductive charging system Part 1: General requirements
6	GB/T 2423.1	Environmental testing for electrical and electronic products Part 2: Test methods Experiment A: Low temperature
7	GB/T 2423.2	Environmental testing for electric and electronic products Part 2: Test methods Experiment B: High temperature
8	GB/T 2423.10	Environmental testing for electric and electronic products Part 2: Test methods Experiment Fc: Vibration (sinusoidal)
9	GB/T 2423.17	Environmental testing for electrical and electronic products Part 2: Test methods Experiment Ka: Salt spray
10	GB/T 2423.22	Environmental testing for electric and electronic products Part 2: Test method Experiment N: Temperature change
11	GB/T 28046.2	Environmental conditions and testing for electrical and electronic equipment in road vehicles - Part 2: Electrical loads
12	GB/T 17619—1998	Limits and Measurement Methods for Electromagnetic Radiation Immunity of Electrical and Electronic Components in Motor Vehicles
13	GB/T 4094.2—2005	Markings for electric vehicle controls, indicators and signal devices
14	QC/T 413-2002	Basic technical requirements for automotive electrical equipment
15	IEC 61851-1	Technical Committee on Electric Road Vehicles - General Requirements for Charging Systems
16	GB 14023—2011	Vehicles, vessels and internal combustion engines Radio disturbance characteristics Limits and measurement methods for the protection of external receivers

Protection characteristics					
Input overvoltage protection point			1098	Vdc	Software output is adjustable, this value is the hardware current limit value
Input overvoltage recovery point				Vdc	
Input under voltage protection point	440			Vdc	Turn off output
Input under voltage recovery point	450			Vdc	
Output over voltage protection point		36		Vdc	
Output under voltage protection point		21		Vdc	



Over temperature protection	100	°C	The DC's internal CPU detects the DC's internal temperature and, under this condition, reduces power and derates output.
	110	°C	The DC's internal CPU monitors its internal temperature. When it reaches 100 degrees Celsius, the power output is reduced. However, if the temperature persists at 110 degrees Celsius, the DC shuts down its output.
Output overcurrent protection	165	A	Software output is adjustable, this value is the hardware current limit value

4.3 Electrical performance requirements for low voltage signal

Electrical characteristics			
	Signal	state	Technical indicators
Signal interface	KL30 Power Supply	yes	9~14V power supply, 1Amax
	CAN communication	yes	500kbs
	High voltage interlock	yes	Internal testing

4.4 Safety performance and others

Item		Technical indicators	unit	
Dielectric strength	Input to housing	3000 V DC , 3s, leakage current ≤ 1 mA		No breakdown or arcing
	Input to Output	3000VAC , 3s , leakage current ≤ 1 mA		No breakdown or arcing
Insulation resistance	DC high voltage-DC low voltage (housing ground)	Resistance ≥ 100 M Ω , test voltage 500 VDC		No breakdown or arcing
Ground resistance	Ground wire to housing - DC low voltage (housing ground)	≤ 0.1	Ω	The resistance between the grounding point and the heat sink is less than 100 milliohms, with a test current of 25A AC.
Creepage clearance		≥ 8 mm		Meet the requirements of Table 3 of GB/T18488.1-2001
Electrical clearance		≥ 3 mm		Meet the requirements of Table 3 of GB/T 18488.1-2001
MTBF		150000H	h	Ambient temperature 25°C



4.5 Electromagnetic compatibility

Test items	Reference Standards	Performance indicators	Criteria
Conducted Emission(CE)	GB/T 18655-2010	Level 3	
Radiated Emission (RE)	GB/T 18655-2010	Level 3	
Electrostatic Disturbance (ESD)	GB/T 19951-2005	Whole unit (power-on) contact discharge: $\pm 6\text{KV}$ Air discharge: $\pm 8\text{KV}$	B
		Whole unit (unpowered) contact discharge: $\pm 6\text{KV}$ Air discharge: $\pm 15\text{KV}$	C
Radiated electromagnetic field immunity free field method (RS)	GB/T 17619-1998		A
Radiated electromagnetic field immunity Bulk current injection (BCI)	GB/T 17619-1998		A
Electrical Transient Conducted Interference Immunity along Power Supply Lines (CS)	GB/T 21437.2-2008 (ISO 7637-2)	level 4	Pulse1 , Pulse2b is D , Puls2a , Pulse 3a/3b is A
Electrical Fast Transient/burstimmunity Test (EFT)	GB / T 17626.4-2008 (IEC 61000-4-4)	$\pm 4\text{KV}$, 5KHz/100KHz	B

Criteria definition:

A: Indicators remain within specification limits during the test.

B: Automatic recovery to specification limits upon test completion

C: Manual recovery to specification limits possible upon test completion

5 Interface requirements

5.1 General interface requirements

The DC/DC converter primarily consists of a low-voltage interface and a high-voltage interface. The interface connector model and component location are defined according to the vehicle layout.



5.2 DC /DC Converter Low Voltage Connector Information

Connector Name		Part Side Connector			Mating Connector			Remark
					(wiring harness)			
		P/N	Supplier		P/N	Supplier		
Low voltage signal plug-in			Sumitomo (6188-6277)					
No.	Signal bit number	Name	Function	Max current capability (mA)	Signal type	Conduct or Cross-section area	Wire color	Remark
1		PIN1	KL30	External power supply	1000	constant current		
2		PIN2	KL15	External power supply	1000	constant current		
4		PIN7	CANH	communication	200	Continuous pulse		
5		PIN8	CANL	communication	200	Continuous pulse		
6		others	Reserve					