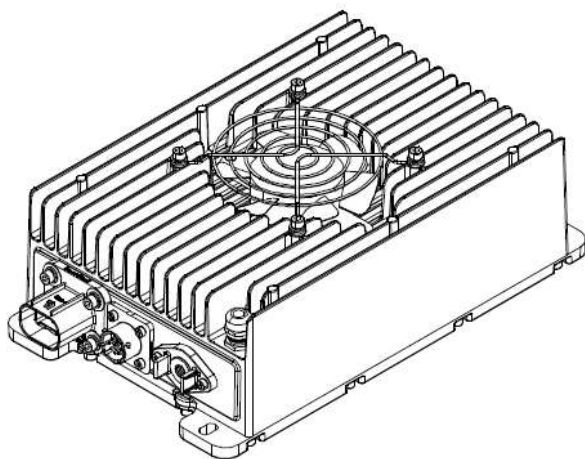




Input DC 250V~450V Output 13.8V 2.5KW DC/DC Converter Fan
Model No. ATRD2K5-360S138F



The connectors will be modified as per requirement.

Features

- 1 Rated Output Power(KW): 2.5 Peak: 3.0@6min
- 2 Input Voltage Range(VDC): 250-450
Nominal Voltage(VDC): 360
- 3 Output Voltage Range(VDC): 0~16
- 4 Rated Output Voltage(VDC): 13.8
- 5 Output Current Range(A): 0~178
- 6 Dimensions(mm): 291.2 x 168 x 92.6
- 7 Weight(KG): $\leq 6.5 \pm 0.5$
- 8 Cooling System: Fan
- 9 IP Rating: IP67
- 10 Communication: CAN2.0 B SAE J1939
- 11 Enclosure: Aluminum alloy
- 12 Pre-charge & Isolated: Supported
- 13 Software: Digital software design
- 14 Online Upgrade & Fault Diagnosis: Supported

Requirements:

1. DC/DC parameters

Item	Description	Customer Confirmed parameters
1	DCDC input voltage	250~450VDC
2	DCDC output voltage	13.8VDC
3	DCDC control method	VCC connect to battery +, EN connect with ON position
4	Frame format	Standard ID
5	Byte order	Motorola
6	Baud rate	500Kbps
7	Wakeup DCDC by (CAN or Hard wire)	Pin C (KL15) is enable for DCDC
8	DCDC with / without interlock function	No interlock function
9	DCDC activation method	CAN

Specification

Description		Remark
Efficiency	$\geq 92\%$	Rated input voltage, load $> 30\%$
Output Voltage Ripple	$\leq 200\text{mVp-p}$	
Output Voltage Accuracy	± 0.2	
Quiescent Current	$< 100\mu\text{A}$	Battery current will be consumed in sleep/standby mode

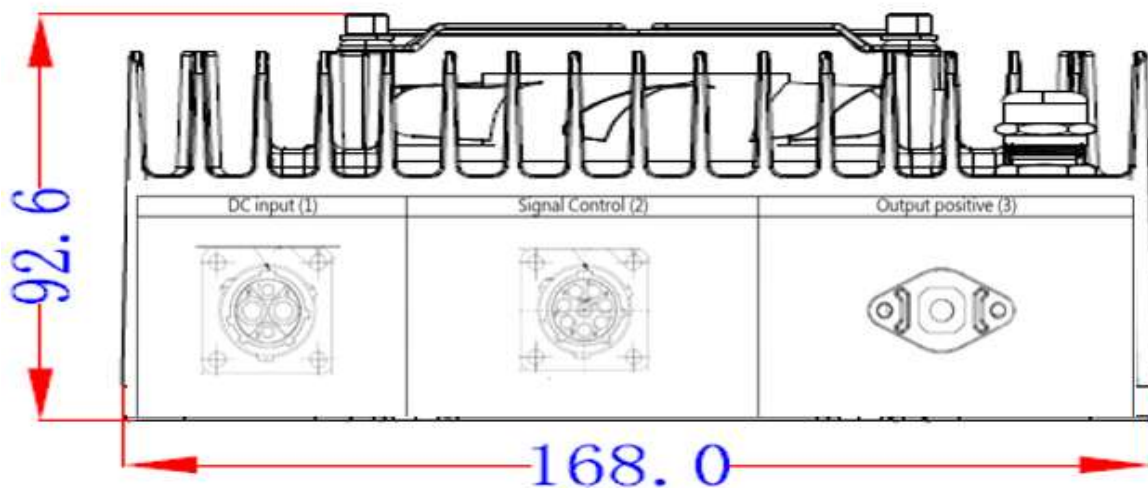
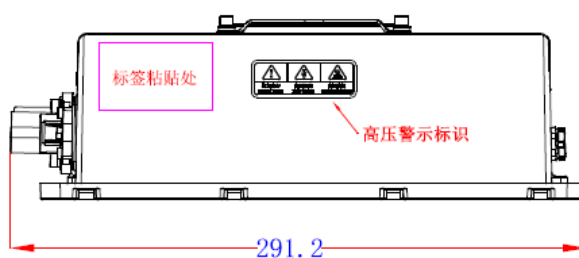
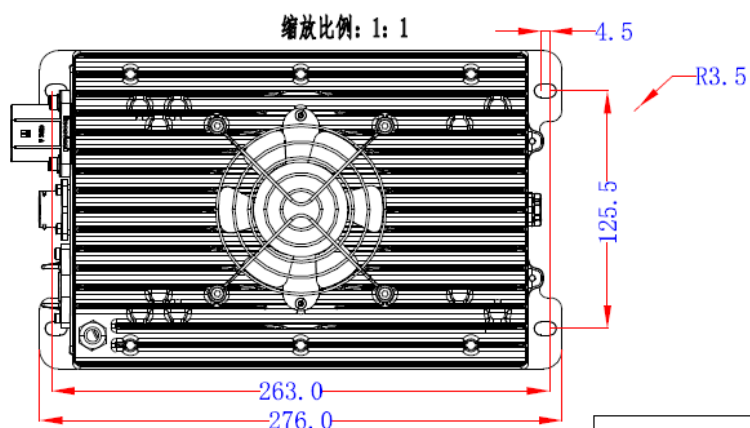
Operating Environment

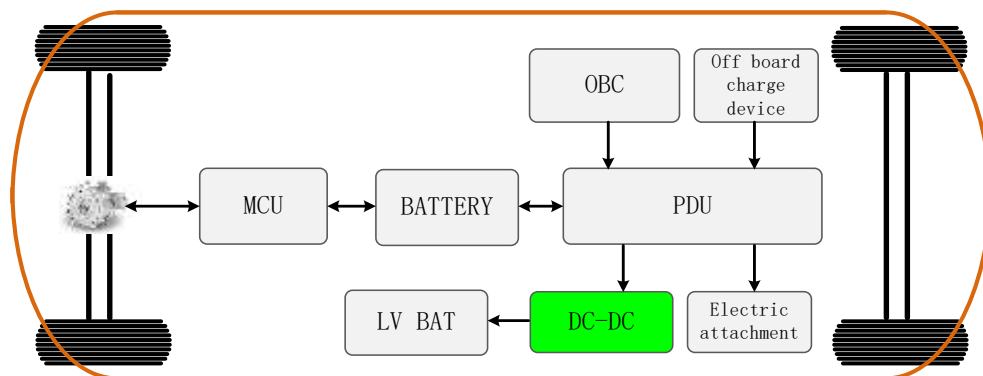
The operating environment conditions of this assembly are as follows:

Items	Descriptions		Remark
1.	Operating Temperature($^{\circ}\text{C}$)	-40~85	The power will be derated when the temperature exceeds 65°C



2.	Storage Temperature(°C)	-40~95	
3.	relative humidity(%RH)	5~95	No condensation, no frost
4.	Protection level	IP67	
5.	Cooling method	Fan	
6.	Vibration level	ISO 16750-3,2012 (E)	After X,Y,Z three directions of sweep frequency vibration testing, no damage for parts , no loose for fastening piece
7.	Noise level(dB)	<60	
8.	Salt spray level	GB/T 2423.17	
9.	Altitude(M)Max	3000	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
11.	Protection Characteristics	OTP& OVP & UVP& SCP	
12.	Electromagnetic immunity	GB/T17619-1998 chap4	
13.	Electromagnetic disturbance	GB18655-2002chap 12 chap14	





WIRING DIAGRAM

- **Item 1:** Signal control connects to the VCU or BMS.
- **Item 2:** DC input connects to the PDU or battery pack or other devices.
- **Item 3:** DC output (+) connects to the auxiliary battery, auxiliary battery connects to the enclosure for ground protection.

Note: The enclosure must be securely mounted onto the vehicle bracket and keep flat position.

CONNECTOR TABLE

Connector Model

Position	Function	Brand	Socket Model	Plug Model
1	DC Input	Amphenol	RT00122PN03	RT06122SNHEC03
2	Signal control	Amphenol	RT00128PN03	RT06128SNHEC03
3	Output +	Gvtong	GH01-F200-1ANB-T21	M8 Screw
4	Output -	/	M8 Bolt	M8 Screw

Interface Definition

DC Input(1)		Signal Control(2)		Output Positive(3)	
A	Input +	A	CAN-H	+	Output +
B	Input -	B	CAN-L		
1	NC	C	Enable (KL15)		
2	NC	D	VCC+(KL30)		
		E	GND(KL31)		
		F	NC		
		G	NC		
		H	NC		

Revision History

Revision	Description	Date(mm/dd/yyyy)	Released by	Approved by
V0	First initiated	02/11/2026	Alisa Chen	Alisa Chen
V0.1	Modified in marked yellow	02/11/2026	Alisa Chen	Alisa Chen