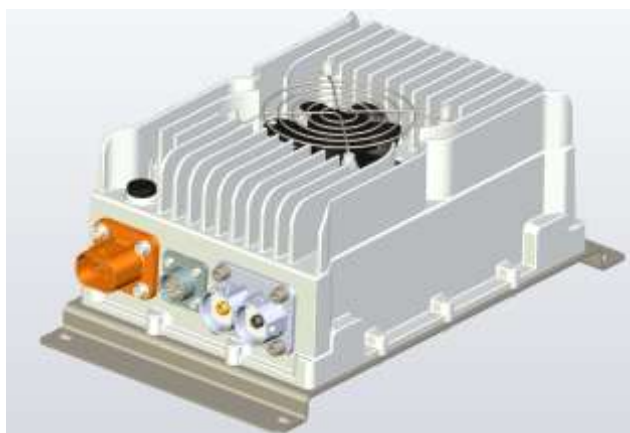




Input DC 200-500V Output 27.5V 1.8KW DC/DC Converter Fan
Model No. ATRD1K8-390S275F



THIS IS IMAGE FOR REFERENCE ONLY.
PLEASE REFER TO CONNECTORS TABLE FOR
DETAILS

Features

- 1 Output Power: 1.8KW
- 2 Input Voltage Range(VDC): 200-500
Rated Input Voltage(VDC): 390
- 3 Output Voltage Range(VDC): 0~32
- 4 Rated Output Voltage(VDC): 27.5
- 5 Output Current Range(A): 0~109
Output Current Max(A): 109
- 6 Dimensions(mm): 291.2 x 168 x 92.6
- 7 Weight(KG): $\leq 4.5 \pm 0.3$
- 8 Cooling System: Fan
- 9 IP Rating: IP67
- 10 CAN compatibility: CAN2.0 B SAE J1939
- 11 Enclosure: Aluminum alloy
- 12 Isolated: Supported
- 13 Software: Digital software design
- 14 Online Upgrade & Fault Diagnosis: Supported

Specification

Description		Remark
Input Voltage Range (VDC)	200-500	
Rated Input Voltage (VDC)	390	Adjusted as per requirement
Output Voltage Range(VDC)	0-32	
Rated Output Voltage(VDC)	27.5	Adjusted as per requirement
Output current(A) Max.	109	
Efficiency	$\geq 92\%$	Rated input voltage, load $> 30\%$
Output Voltage Ripple	$\leq 200\text{mVp-p}$	
Output Voltage Accuracy	$\pm 0.2\text{V}$	
Communication Method	ISO 11898-2	
Quiescent Current	$< 100 \mu\text{A}$	Battery current will be consumed in sleep/standby mode
Pre-charge and active discharging	Built in	

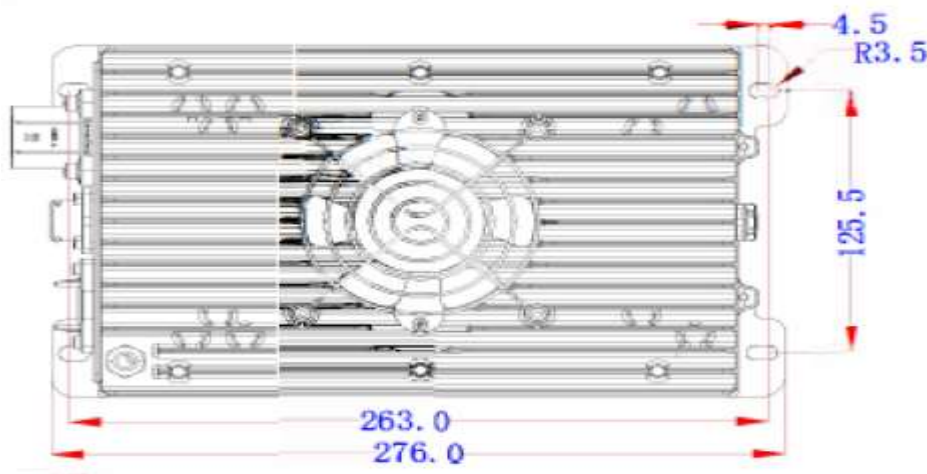
Operating Environment

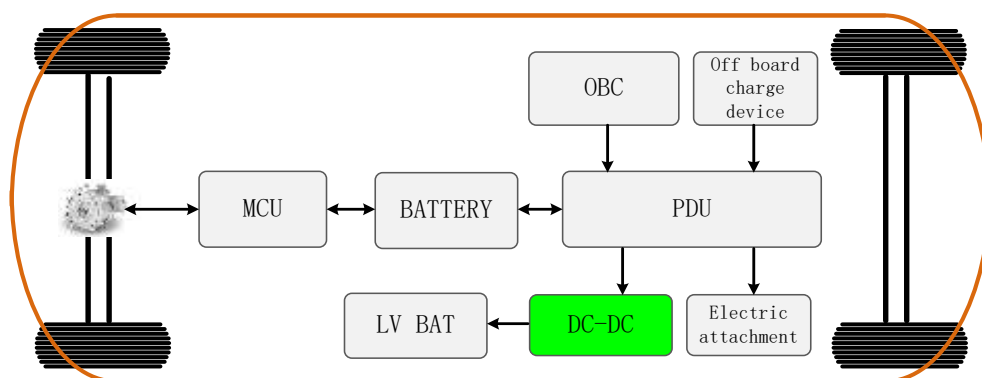
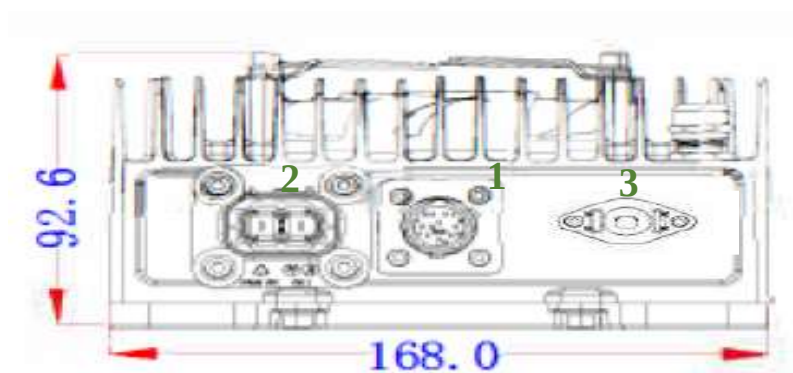
The operating environment conditions of this assembly are as follows:

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($^{\circ}\text{C}$)	-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 24V (+) auxiliary battery (LV BAT). 24V(-) auxiliary battery connects to the enclosure for ground protection.

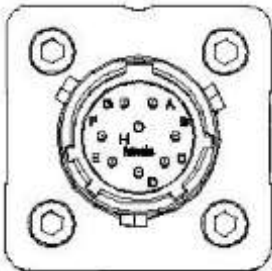
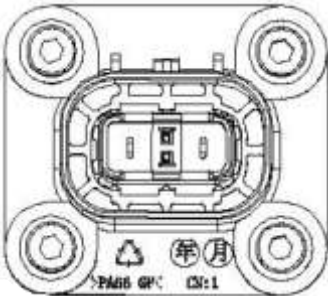
Note: The enclosure must be securely mounted onto the vehicle bracket and keep flat position.



Connector Model

Position	Function	Brand	Socket Model	Plug Model
1	Signal control	Huzheng	FPT20N21208PN	FPT60N21208SN
2	HV DC input	Recodeal	RED-T2PAH-2.5-A	RED-Z2PAH-2.5-A
3	Output +	HUZHENG	FST3288BN-IP67A	M8 BOLT

Interface Definition

Signal Control(1)		HV DC Input(2)		Output Positive(3)	
					
A	CANL 0.75MM2	1	Input + 2.5MM2	1	Output +
B	CANH 0.75MM2	2	Input -2.5MM2		109A 25MM2
C	12V+ Enable 0.75MM2	A	HVIL +		
D	12V-OUT 0.75MM2	B	HVIL -		
E	HVIL + 0.75MM2				
F	HVIL - 0.75MM2				

Cable Current Rating Table for reference only. The actual current-carrying capacity shall be based on the cable manufacturer's specifications

CURRENT (A)	CABLE SIZE (MM2)	CURRENT (A)	CABLE SIZE (MM2)	CURRENT (A)	CABLE SIZE (MM2)
7	0.75	60	10	250	70
22	2.5	80	16	300	95
25	3	125	25	350	120
30	4	150	35		
40	6	200	50		