



Input DC 80~120V Output 13.8V 1KW DC/DC Converter Nature Cooled  
 Model No. ATRD1K-96S138N



The connectors are for reference only. Please refer to the connectors table for details  
 Dimensions(mm): 277 x 165 x 94

**Features**

- 1 Output Power(KW): 1
- 2 Input Voltage Range(VDC): 80~120  
Rated Input Voltage(VDC): 96
- 3 Output Voltage Range(VDC): 12~14.5
- 4 Rated Output Voltage(VDC): 13.8
- 5 Output Current Range(A): 68.96-83.33
- 6 Output Current Max(A): 83.33
- 7 Weight(KG): ≤ 2.85
- 8 Cooling System: Fan
- 9 IP Rating: IP67
- 10 Communication: CAN2.0 B SAE J1939
- 11 Enclosure: Aluminum alloy
- 12 Pre-charge & isolated: Built in
- 13 Software: Digital software design
- 14 Online Upgrade & Fault Diagnosis: Supported

**Specification**

Description		Remark
Efficiency	≥92%	Rated input voltage, load > 25%
Output Voltage Ripple	≤500mV <sub>PK-PK</sub>	
Output Voltage Accuracy(V)	±1%	
Communication Method	CAN-BUS SAE J1939	Baud rate: 500Kbps
Quiescent Current	≤2mA	Battery current will be consumed in sleep/standby mode

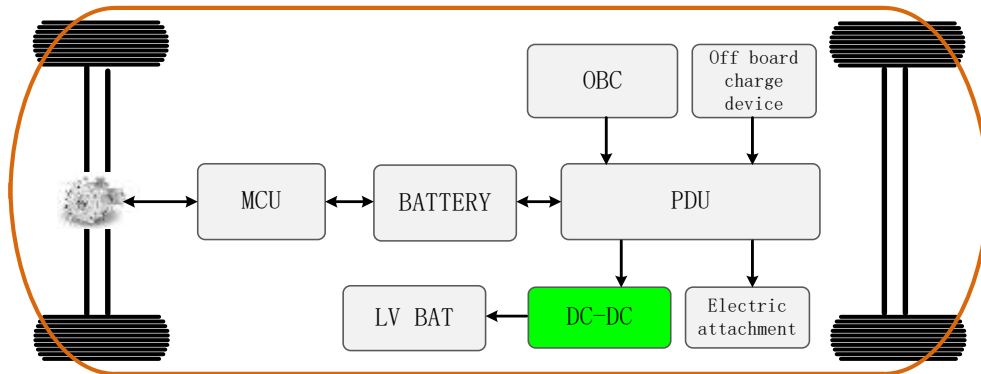
**Operating Environment**

The operating environment conditions of this assembly are as follows:

Items	Descriptions		Remark
1.	Operating Temperature(°C)	40-85	The power will be derated when the temperature exceeds 65°C
2.	Storage Temperature(°C)	40-105	



3.	relative humidity(%RH)	5~95	No condensation, no frost
4.	Vibration level	ISO 16750-3,2012 (E) GB/T 28046.3-2011 - 4.1	After X,Y,Z three directions of sweep frequency vibration testing, no damage for parts , no loose for fastening piece
5.	Noise level(dB)	65	Meet QC /T895-2011
6.	Salt spray level	GB/T 2423.17	
7.	Altitude(M)Max	3000(normal), 5400(Specific regions)	GB/T16935.1-2008
8.	Fall	Wiring harness according to QC/T417.1-2001 Housing according to GB/T 2423.8-1995	Appearance, structure and performance are normal
9.	Protection Characteristics	Input OVP/UVP, output OVP/UVP, input anti-reverse connection, output short circuit protection, OCP, OTP	
10.	Electromagnetic immunity	GB/T17619-1998 chap4	
11.	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.

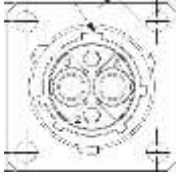
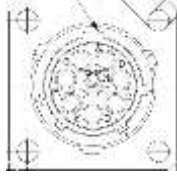
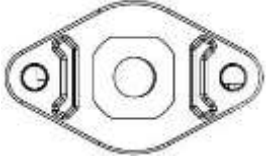


CONNECTOR TABLE

**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
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