



Combo 6.6KW OBC + 1.8KW DC/DC Converter Module

Model No.: ATRCD6618-96S12M

Specification

Description	Technical Specification		Remark
Part Name	OBC	DC/DC	
Rated Output Power(KW)	6.6	1.8	
Input Voltage Range(VAC)	140~265Vac (Mass production)	65-130 Vdc	90 ~ 265 will be implemented in Oct.
Rated Output Voltage(VDC)	96	12	
Output Voltage Range(VDC)	65-130	10-15	
Max Output Current(A)	60		
Typical Efficiency(%)	≥ 91%	≥ 88%	Rated voltage & Specific load
Voltage Accuracy(%)	± 1	± 2	
Others			
Operating temperature	-40°C~+85°C (internal temperature of integrated system cavity); Water cooling system liquid temperature ≤65°C		Complied with QC/T895-2011
Storage temperature	-40~95°C		
Noise level	≤ 60 dB		Complied with QC/T895-2011
Salt fog grade	Complied with QC/T2423.17-2011		
Altitude	≤ 3000 m		GB/T16935.1-2008
Temperature and humidity resistance	Complied with GB/T 2423.22		
Drop	Harness as QC/T417.1-2001 requirement Enclosure follow GB/T2423.8-1995		Normal appearance, structure and performance
Wakeup Method	CAN / Hard wire		
CAN Communication	CAN Bus		
Baud rate	1000kpbs		
CAN bus communication format	Comply with CAN2.0B specification		CAN J1939

Fault Handling, Applicable Standards and Document Control

Fault	Fault Detection Condition	Delay	Handling Method	Fault-Clearing Condition
Input overvoltage	Input voltage exceeds the overvoltage threshold	2 s	Disable high-voltage output	Input voltage falls below the recovery threshold; automatic recovery
Input undervoltage	Input voltage falls below the undervoltage threshold	2 s	Disable high-voltage output	Input voltage rises above the recovery threshold; automatic recovery
Output overvoltage	Output voltage exceeds the overvoltage threshold	2 s	Disable high-voltage output	Output voltage falls below the recovery threshold; automatic recovery
Output overcurrent	Output current exceeds the overcurrent threshold	1 s	Disable high-voltage output	Input current falls below the recovery threshold; automatic recovery
Battery overvoltage	Battery voltage exceeds the overvoltage threshold	2 s	Disable high-voltage output	Battery voltage falls below the recovery threshold; automatic recovery
Battery undervoltage	Battery voltage falls below the undervoltage threshold	2 s	Disable high-voltage output	Battery voltage rises above the recovery threshold; automatic recovery
Serial communication fault	Internal serial communication timeout	1 s	Disable high-voltage output	Serial data is received; automatic recovery
Chip overtemperature	Chip temperature exceeds the protection threshold	2 s	Disable high-voltage output	Chip temperature falls below the threshold; automatic recovery
Mainboard	Temperature exceeds the overtemperature	2 s	Disable high-voltage	Mainboard temperature falls below the threshold;



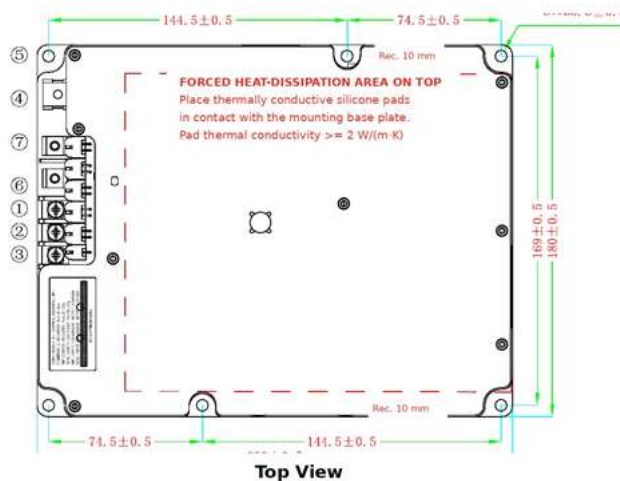
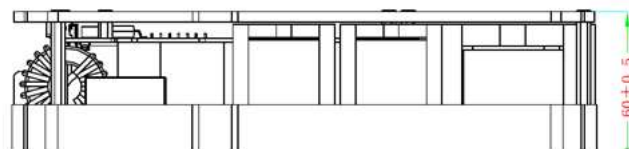
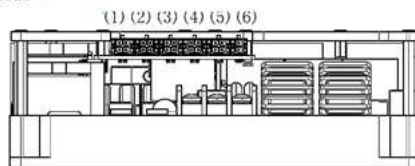
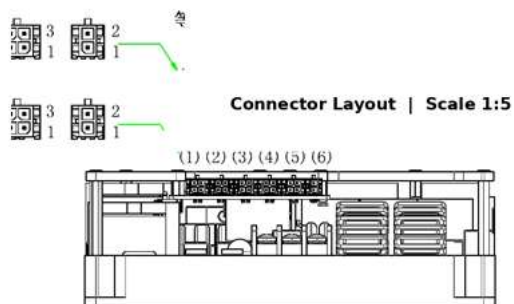
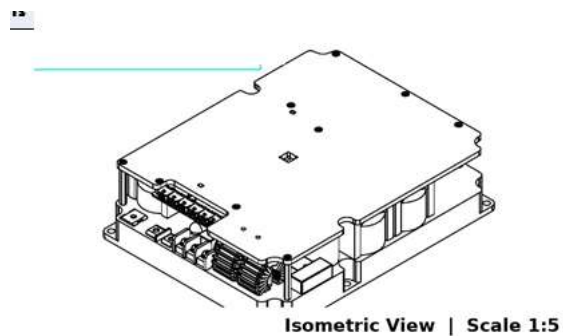
Fault	Fault Detection Condition	Delay	Handling Method	Fault-Clearing Condition
overtemperature	protection threshold		output	automatic recovery
Parameter fault	Abnormal parameter settings	1 ms	Disable high-voltage output	Parameter settings meet the requirements
Input overcurrent	Primary-side current threshold is triggered	1 ms	Disable high-voltage output	Restart; automatic recovery
CAN communication fault	Abnormal CAN communication	6 s	Disable high-voltage output	A CAN message is received; automatic recovery

Standard

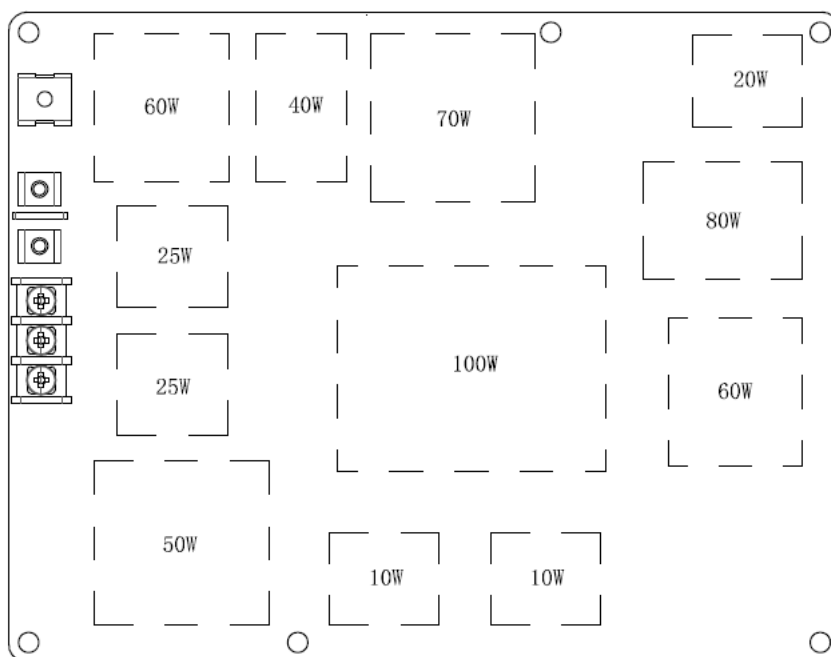
Standard No.	Standard Title	Remarks
QC/T 413	Basic Technical Requirements for Automotive Electrical Equipment	
QC/T 895	Conductive On-board Charger for Electric Vehicles	
GB/T 2423.1	Environmental Testing for Electrical and Electronic Products—Part 2: Test Methods—Test A: Cold	
GB/T 2423.2	Environmental Testing for Electrical and Electronic Products—Part 2: Test Methods—Test B: Dry Heat	
GB/T 2423.3	Basic Environmental Testing Procedures for Electrical and Electronic Products—Test Ca: Damp Heat, Steady State	
GB/T 2423.5	Environmental Testing for Electrical and Electronic Products—Part 2: Test Methods—Test Ea and Guidance: Shock	
GB/T 2423.6	Environmental Testing for Electrical and Electronic Products—Part 2: Test Methods—Test Eb and Guidance: Bump	
GB/T 2423.8	Environmental Testing for Electrical and Electronic Products—Part 2: Test Methods—Test Ed: Free Fall	
GB/T 2423.11	Environmental Testing for Electrical and Electronic Products—Part 2: Test Methods—Test Fd: Broadband Random Vibration	
GB/T 18488.1	Drive Motor System for Electric Vehicles—Part 1: Technical Specifications	
GB/T 17626.2	Electromagnetic Compatibility—Testing and Measurement Techniques—Electrostatic Discharge Immunity Test	
GB/T 17626.3	Electromagnetic Compatibility—Testing and Measurement Techniques—Radiated Radio-frequency Electromagnetic Field Immunity Test	
GB/T 17626.4	Electromagnetic Compatibility—Testing and Measurement Techniques—Electrical Fast Transient/Burst Immunity Test	
GB/T 17626.5	Electromagnetic Compatibility—Testing and Measurement Techniques—Surge Immunity Test	
GB/T 27930	Digital Communication Protocol between an Off-board Conductive Charger and an Electric Vehicle	
Q/FT B102	Traceability Marking Requirements for Vehicle Components	



Structural Parameters (unit : mm)



Heating Distrubituon and Installation



热分布图

Mounting / Heat-dissipation requirements
The upper marked area is the forced heat-dissipation zone.
Install thermally conductive silicone pads so they contact the mounting base plate.
Silicone-pad thermal conductivity: at least 2 W/(m·K).
Recommended pad thickness / contact allowance at marked locations: 10 mm.



Electrical Interfaces and Performance Parameters

No.	Definition	Pin Description	Connector Specifications	Recommended Connection
①	PE	Protective earth	Rated current: 80 A Screw-hole size: M4 Tightening torque: 1.0–1.6 N·m	OT terminal / copper busbar
②	L	On-board charger input live	Rated current: 80 A Screw-hole size: M4 Tightening torque: 1.0–1.6 N·m	OT terminal / copper busbar
③	N	On-board charger input neutral	Rated current: 80 A Screw-hole size: M4 Tightening torque: 1.0–1.6 N·m	OT terminal / copper busbar
④	DC+	DC/DC output positive terminal	Rated current: 80 A Screw-hole size: M8 Tightening torque: 10–16 N·m	OT terminal
⑤	DC–	DC/DC output negative terminal	Connected to the module housing	OT terminal
⑥	VO–	On-board charger output / DC/DC input negative terminal	Rated current: 80 A Screw-hole size: M4 Tightening torque: 1.0–1.6 N·m	OT terminal
⑦	VO+	On-board charger output / DC/DC input positive terminal	Rated current: 80 A Screw-hole size: M4 Tightening torque: 1.0–1.6 N·m	OT terminal

CONNECTOR TABLE

Connector	Pin	Definition	Pin Description
(1)	1	CAN-L	CAN-L signal
	3	CAN-H	CAN-H signal
	2	GND	12 V output ground
	4	12V 0.5A Output	12 V positive output (current > 0.5 A)
(2)	1	CCout signal	CCout signal output
	3	Wake-up signal input+	Wake-up signal input > 15 V
	2	Enable–	Enable negative
	4	Enable+	Enable positive
(3)	1	Connection Pilot	CP (Connection Pilot) signal
	3	Connection Confirm	CC (Connection Confirmation) signal
	2	GND	Chassis ground
	4	12V Battery	12 V unswitched battery input
(4)	1	+5V0	+5 V low-voltage output
	3	Temp1+	Thermistor A-1
	2	GND	Common negative terminal of the thermistors
	4	Temp2+	Thermistor B-1
(5)	1	Lock driver–	Electronic-lock control signal negative
	3	Lock driver+	Electronic-lock control signal positive
	2	Check1	Electronic-lock detection signal 1
	4	12V 0.2A Output	12 V positive output (current > 0.2 A)
(6)	1	FAN– 12V1A	12 V / 1 A fan interface negative
	2	FAN+ 12V1A	12 V / 1 A fan interface positive