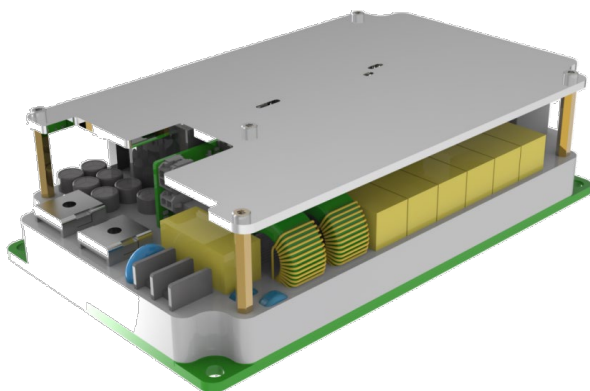




Input DC 580~680V 2.5KW DC/DC Converter Module

Model No. ATRD2K5-640S12M



3D file no: 901.20070000.00.stp.
Module no.: 2000-01

Features

1. Output Power(KW): 2.5
2. Input Voltage Range(VDC): 580-680
3. Rated Input Voltage(VDC): 640
4. Output Voltage Range(VDC): 0~16
5. Rated Output Voltage(VDC): 12
6. Output Current Range(A): 0~179
7. Communication: CAN2.0 B SAE J1939
8. Isolated: Supported
9. Software: Digital software design
10. Online Upgrade & Fault Diagnosis: Supported

2. Electrical Characteristics

2.1 Electrical Characteristics

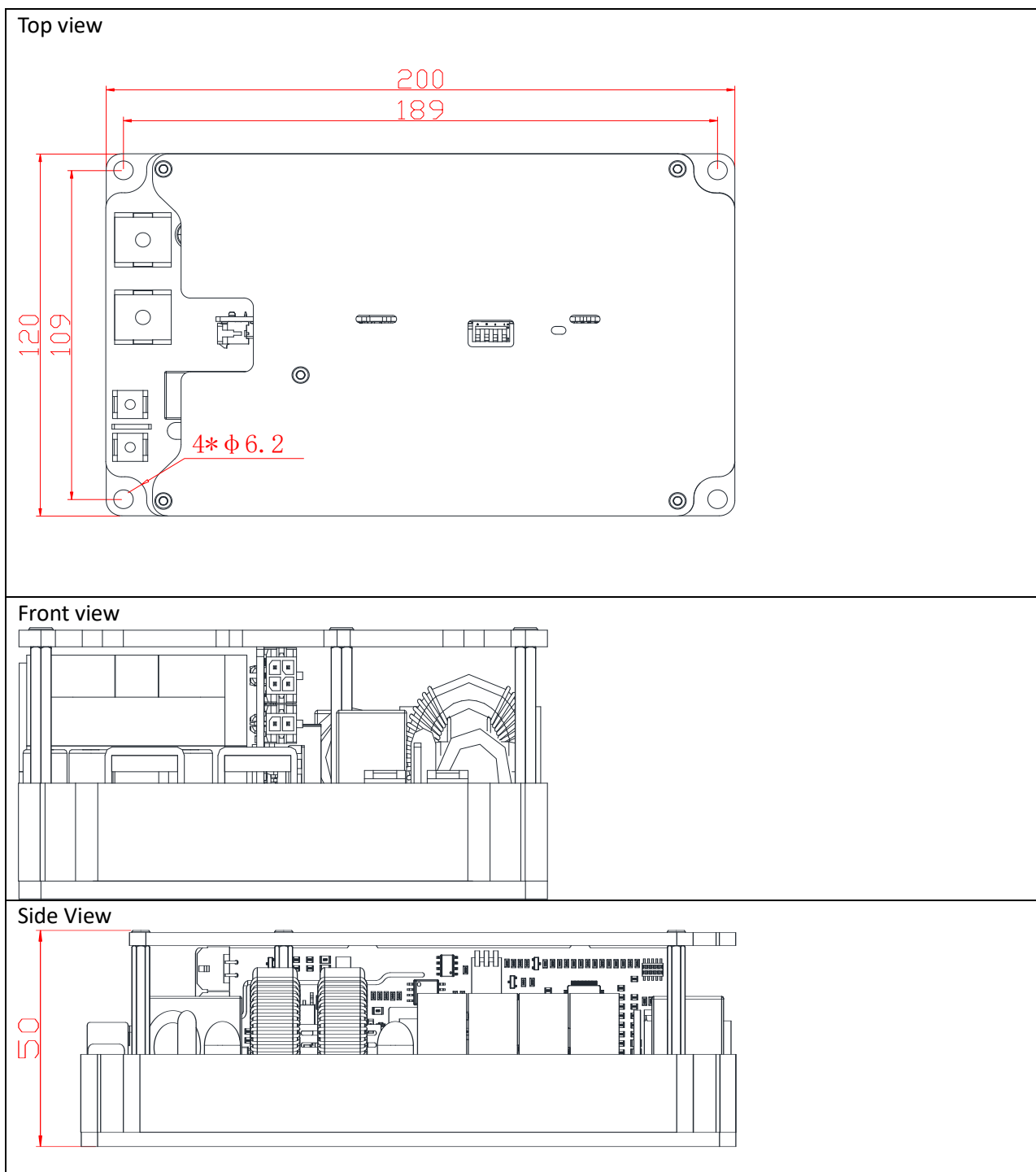
Input and output characteristics	
Input pre-charge circuit	built-in
Input pre-charge resistance	120R
Bus Capacitor	12uF
Voltage regulation accuracy V	±0.2
Output response time	≤200mS
Typical efficiency	≥92%
Protection features	
Over-voltage and under-voltage protection	The input over-voltage or under-voltage shutdown can be self-recovered, and the output over-voltage or under-voltage shutdown can be self-recovered.
Output reverse connection and short circuit protection	Shutdown when output is short-circuited or reverse connected, self-recovery
Over temperature protection	When the heat sink temperature is higher than 75°C, the output power is reduced. When the temperature is higher than 95°C, the circuit is disconnected. The charger resumes output when the charging temperature returns to below 85°C.



Environmental conditions		
Operating temperature	-40℃~+85℃ (internal temperature of integrated system cavity); Water cooling system liquid temperature ≤65℃	
Storage temperature	-40~95℃	
Cooling function	Modular design, water cooling or air cooling housing/substrate required	
Communication function	CAN bus	
Control method	No enable control; hard line high level enable control; CAN communication enable control	
Safety features		
Dielectric strength	Primary side - secondary side 2800VAC	Primary side - case 2800VAC
Insulation resistance	Primary side - secondary side ≥50MΩ	
Vibration resistance	After the X, Y, and Z direction sweep frequency vibration test, the parts were not damaged and the fasteners were not loose.	
Impact resistance	Refer to the requirements of 6.5 in GB/T15139-1994	
Industrial solvent resistance	Metal parts have good anti-corrosion layer	
Anti-salt spray performance	See GB/T 2423.17	
Durability	At no less than the relevant provisions of GB/T 24347-2009	
EMC characteristics		
Electromagnetic immunity	Meet the requirements of Chapter 4 of GB/T17619-1998	
Electromagnetic disturbance	See the limits specified in Chapter 12 and Chapter 14 of GB18655-2002	

3.Dimensions and weight

3.1Product size



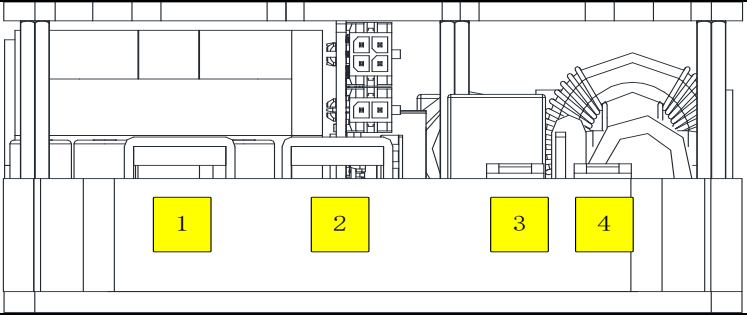
3.2. Product Weight

2.2Kg $\pm$ 0.3Kg

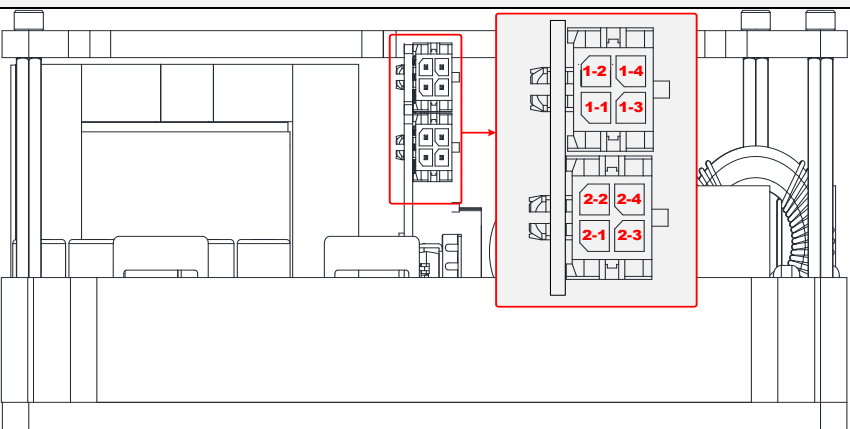


4. Definition of connector and connection terminals

4.1. Power Port Definition

Power Port Definition					
					
NO.	definition	Pin Description	Connector Specifications		Recommended connections
1	VO+	DC-DC output positive terminal		spacing: 11.00mm Screw hole diameter: M8 Screw torque: 80 Kgf/cm	Copper busbar
2	VO-	DC-DC output negative terminal			
3	VI+	DC-DC input positive terminal		spacing: 5.00mm Screw hole diameter: M4 Screw torque: 18 Kgf/cm	OT terminal/ Copper busbar
4	VI-	DC-DC input negative terminal			

4.2 Signal port definition

Signal port definition			
			
Pinout	definition	Pin Description	
①	1	CAN-L	CAN- Low signal
	3	CAN-H	CAN- High signal



	2	12V/24V LVDC GND	12V/24V Auxiliary Power Supply Ground (Note 1)
	4	12V/24V LVDC input	12V/24V Auxiliary Power Supply Input
②	1	Enable signal input GND	Hardwire Enable Signal Input Reference Ground (Note 2)
	3	Enable signal input	Hardwire Enable Signal Input (8–32V)
	2	FAN- 12V0.3A	12V/0.3A fan driver negative
	4	FAN+ 12V0.3A	12V/0.3A fan driver positive port
Note 1: Explanation regarding low-voltage auxiliary power input. The module has two wake-up modes, described as follows: 1.High-voltage wake-up When high voltage is connected, the internal auxiliary source operates, the module is awakened, and it sends out messages while waiting for work instructions. 2.Low-voltage wake-up Without high voltage connected, when 12V/24V power is supplied to terminal ①-4, the module can also be awakened to perform self-checks and send out messages. Note 2: The ground for external hardwire enable signal input is by default not common with the output negative terminal. If the hardwire enable function is required, pin 3-1 must be connected to pin 1-2, or directly connected to the power output negative terminal, or alternatively, forced grounding can be selected via DIP switch (Section 5.5).			

Definition and selection of signal connectors				
4-core signal connector	4-pin plug-in connector	2-core signal connector	2-pin plug-in connector	Terminal core
				
Default signal connector selection 【MOLEX】				
0430450400	0430250400	0430450200	0430250200	430300001
Domestic alternative models [Dongguan Yuliang Electronics Co., Ltd.]				
YL009-047-004	YL009-047-A04	YL009-047-002	YL009-047-A02	YL009-047
Domestic alternative models [Dongguan Kangdao New Energy Technology Co., Ltd.]				
23001W90-2*2PA-A1-SN	23001H-2*2PA-66	23001W90-1*2PA-A1-SN	23001H-1*2PA-66	23001TOP-SN
Domestic alternative models [Zhejiang Hongxing Electric Co., Ltd.]				
HX30002-4WA	HX30002-4P	HX30002-2WA	HX30002-2P	HX30001-PT



4.3.Signal interface schematic diagram

