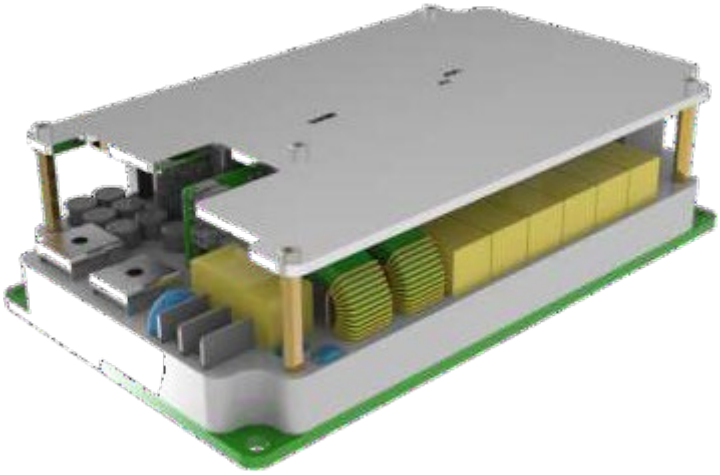
ANNREN TECHNOLOGIES CO., LTD.
https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

2.5KW DC/DC Converter Module Series Model No.

2.5KW	ATD2K5-540S14-TR2000	ATD2K5-360S14-TR2001	ATD2K5-144S14-TR2002



Version: V0 Date: 09/30/2025
File No.: SDC-P76-0

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

1. Product Introduction

AT-TR2000 series on-board DC-DC converter is a high-power, high-density and high-efficiency DC-DC converter specially developed for new lithium-ion electric vehicles, logistics vehicles, special vehicles, construction machinery and other new energy vehicles. It is designed and developed with modular, standardized and universal design ideas.Fully digital control technology design, flexible and intelligent control, good protection characteristics, strong system robustness. Built-in microprocessor communicates with the monitoring unit, and the internal parameters can be set or adjusted by the upper monitoring unit through the CAN interface.

It has multiple protection functions such as input over-voltage and under-voltage protection, output over-current protection, output over-voltage protection, output short-circuit protection, and over-temperature protection.

Key specifications:

model	Input voltage	Output Power	Rated output voltage	Output voltage and current range	3D data model
ATD2K5-540S14-TR2000	400~900VDC	2.5KW	14VDC	0-16VDC/0-178A	901.20010000.00.stp
ATD2K5-360S14-TR2001	200~500VDC	2.5KW	14VDC	0-16VDC/0-178A	
ATD2K5-144S14-TR2002	80~200VDC	2.5KW	14VDC	0-16VDC/0-178A	

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

1. Electrical characteristics

2.1 . Electrical characteristics

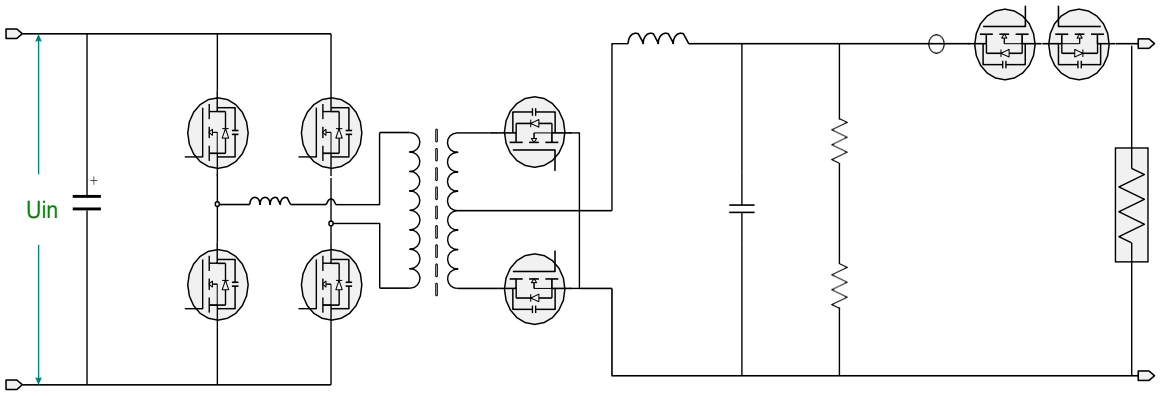
model			
Vehicle power supply type	**Integrated isolated automotive DC-DC converter module**		
Input and output characteristics			
model	**AT D2K5- 540S14- TR2000**	**AT D2K5- 360S14- TR2001**	**AT D2K5- 144S14- TR2002**
Rated input voltage	**540**	**360V**	**144V**
Input voltage range	**400-900**	**200-500**	**80-200**
Input precharge circuit	**built-in**	**built-in**	**built-in**
Input pre-charge resistance	**120R**	**120R**	**30R**
Starting surge current	**≤11A**	**≤7.5A**	**≤12A**
Bus Capacitor	**12uF**	**22uF**	**42UF**
Rated output power	**2.5KW**	**2.5KW**	**2.5KW**
Rated output voltage V	**14**	**14**	**14**
Output voltage range V	**0～16**	**0～16**	**0～16**
Output current range A	**0～178**	**0～178**	**0～178**
Voltage regulation accuracy (lead	**±0.1V**	**±0.1V**	**±0.1V**

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

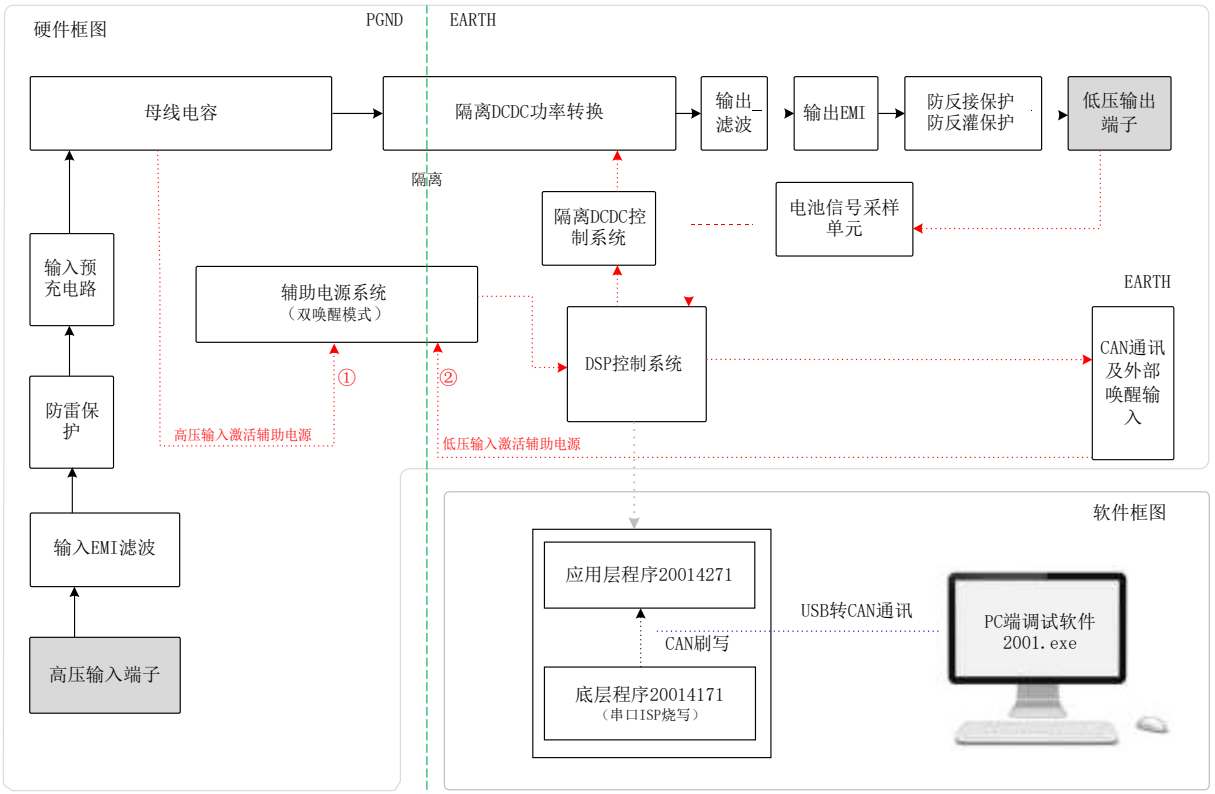
root)			
Typical efficiency	**≥92%**	**≥92%**	**≥92%**
Peak power @6min	**3.0KW**	**3.0KW**	**3.0KW**
Output response time	**≤200mS**		
Boot time	＜1s		
Output ripple and noise	≤200mVp-p (connect one 0.1uF ceramic chip and one 10uF electrolytic capacitor in parallel at the output end, and the oscilloscope bandwidth is 20MHz)		
Static current consumption	＜100uA (leakage current when the output terminal is connected to a 24Vdc battery in the non-awakening state)		
Input continuous on/off	Under the condition of given control signal and normal output, the input can meet the impact of 5 consecutive on-offs within 1 minute, and the power supply will not fail or be damaged.		
Input power-on sequence	Apply high voltage first, then control signal Apply control signal first, then apply high voltage High voltage and control signal are given at the same time Under these three input power-on timings, the power supply can work normally without protection or damage		
Hardwire Enable Voltage	Hard-wire enable signal input voltage range (8-32V)		
Low voltage auxiliary power input	The module has its own high-voltage auxiliary power source and is compatible with 12V/24V normal power input		
Working noise	-		
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	Output short circuit protection (hiccup, self-recovery when fault removed)		
Over temperature protection	When the ambient temperature is higher than 50℃, the output power is reduced; when the temperature is higher than 85℃, the circuit is disconnected, and the output is restored when the ambient temperature returns to below 55℃		
Environmental conditions			
Operating temperature	-40℃～+85℃ (internal temperature of integrated system cavity); Water cooling system liquid temperature ≤65℃		
Storage	-40～95℃		

temperature	
humidity	5%～95%
Altitude	0～3000m
IP Rating	IP67
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-secondary 3500VDC Can withstand DC voltage 3500V, 1 minute, leakage current ≤1mA, no breakdown or arcing
Insulation resistance	Primary side - secondary side ≥50MΩ
Charge discharge capability	≤36V (within 5 minutes after DCDC power off)
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
other	
High and low temperature test	Meet the standard GB/T2423
vibration	Meets the standard ISO 16750-3,2012 (E)
Impact test	Meets ISO 16750, 4.2.2.2

2.2. Electrical topology diagram



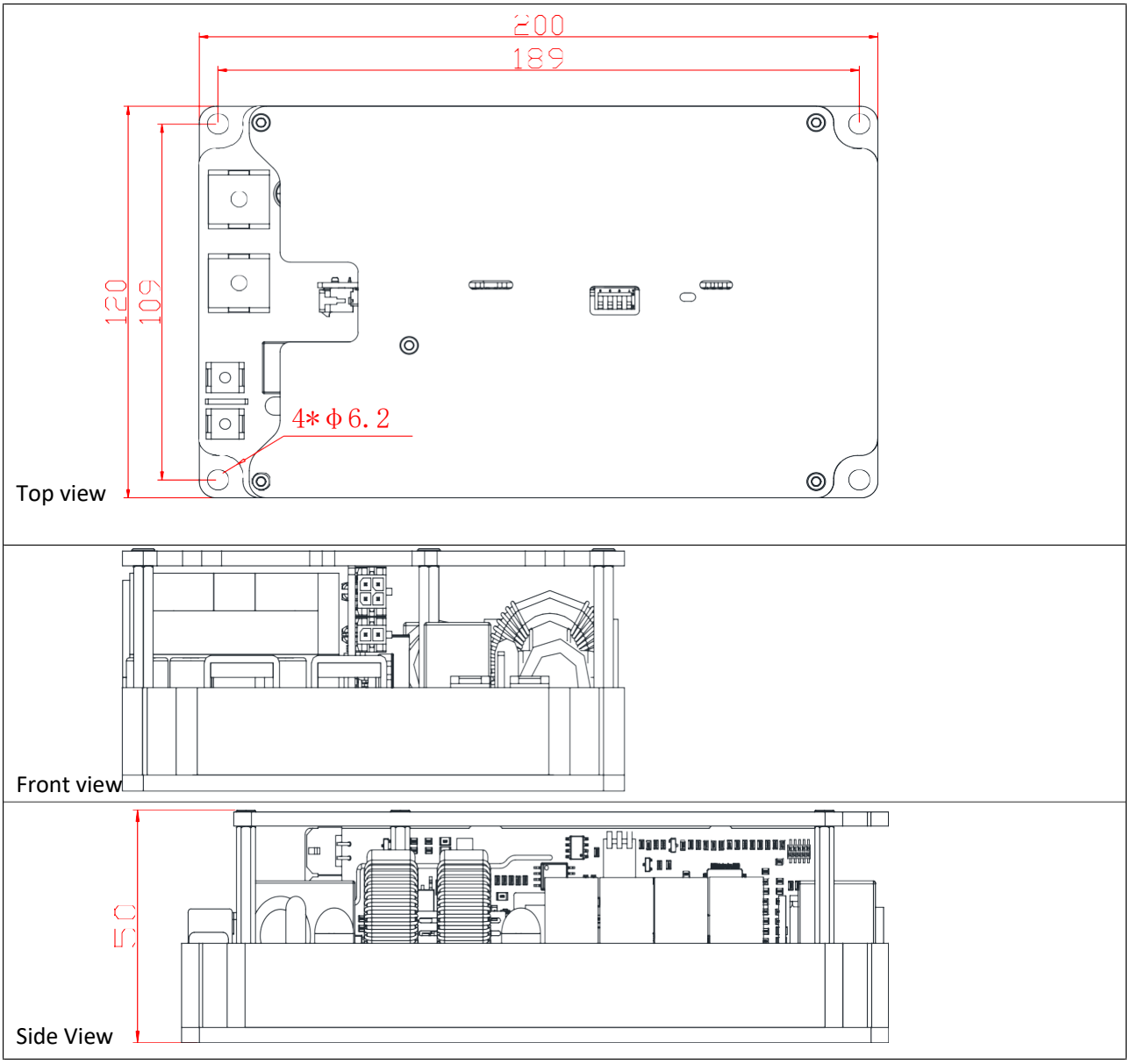
2.3 System Block Diagram



https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

3. Dimensions and weight

3.1. Product size



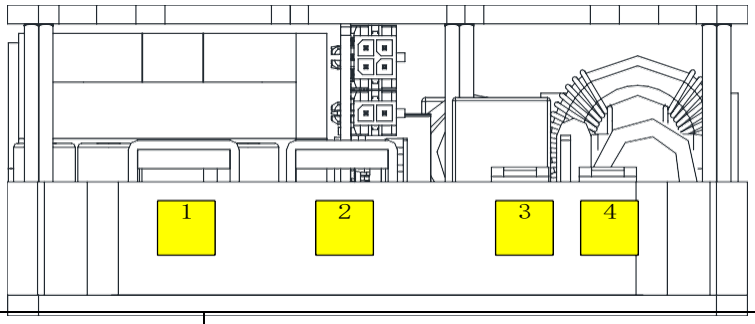
3.2 Product Weight

2.2Kg±0.3Kg

4. Definition of connector and connection terminals

4.1 Power Port Definition

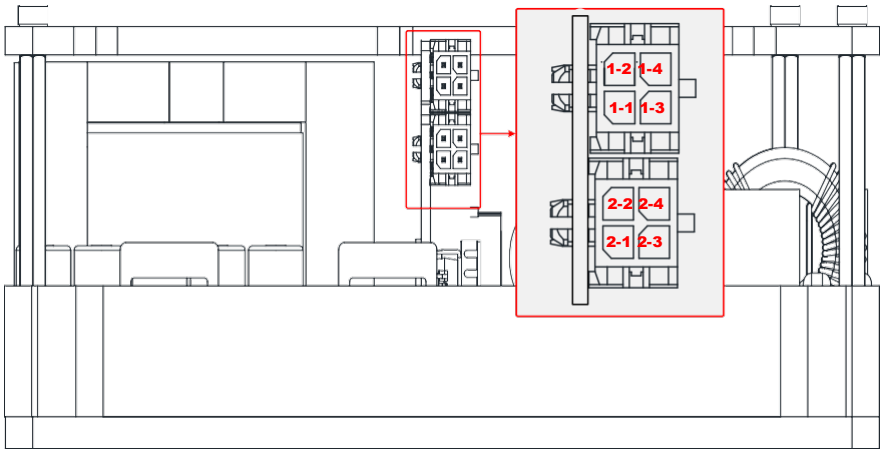
Power Port Definition



serial number	definition	Pin Description	Connector Specifications		Recommended connections
1	VO+	DC-DC output positive terminal		spacing：8.25mm Rated current：180A Screw hole diameter：M8 Screw torque：28 Ibf·in	Copper busbar
2	VO-	DC-DC output negative terminal			
3	VI+	DC-DC input positive terminal		spacing：5.00mm Rated current：60A Screw hole diameter：M4 Screw torque：18 Kgf/cm²	OT terminal/ Copper busbar
4	VI-	DC-DC input negative terminal			

4.2 Signal port definition

Signal port definition



Pinout	definition	Pin Description

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

①	1	CAN-L	CANL signal

	3	CAN-H	CANH 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	Hard-wire enable signal input reference ground (Note 2) Hard-wire enable signal input (8-32V)
	3	Enable signal input	Hardwire enable signal input (8-32V)
	2	FAN- 12V0.3A	12V/0.3A Fan 2 driver negative
	4	FAN+ 12V0.3A	12V/0.3A Fan 2 drive port positive

Note 1: Description of low-voltage auxiliary power supply input. The module has two wake-up modes, as described below:

1. High-voltage wake-up When the internal auxiliary source is connected to high voltage, the module is awakened and sends out messages to the outside, waiting for work instructions.

2. Low-voltage wake-up When high voltage is not connected, the module can also be awakened for self-test and send messages when ①-4 is connected to 12V/24V power supply.

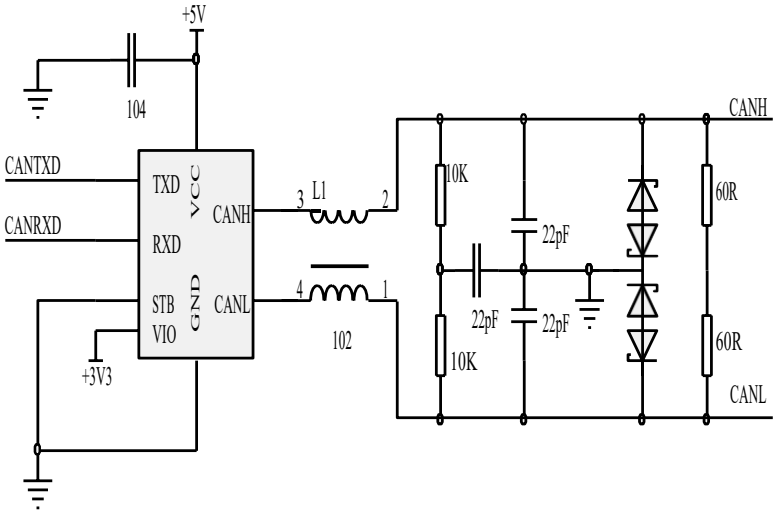
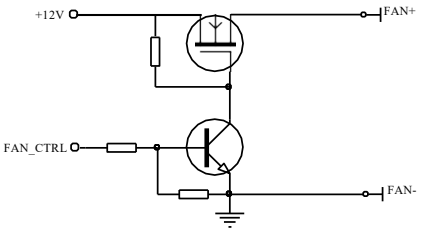
Note 2: The ground of the external input hard-wire enable signal is not shared with the output negative pole by default. If the hard-wire enable function is required, the 3-1 pin needs to be connected to the 1-2 pin or directly connected to the power output negative pole or the forced common ground is selected through the 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 【东莞市宇亮电子有限公司】				
YL009-047-004	YL009-047-A04	YL009-047-002	YL009-047-A02	YL009-047
Domestic alternative models 【东莞市康导新能源科技有限公司】				
23001W90-2*2PA-A1-SN	23001H-2*2PA-66	23001W90-1*2PA-A1-SN	23001H-1*2PA-66	23001TOP-SN
Domestic alternative models 【浙江红星电业有限公司】				
HX30002-4WA	HX30002-4P	HX30002-2WA	HX30002-2P	HX30001-PT

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

4.3 Signal interface schematic diagram

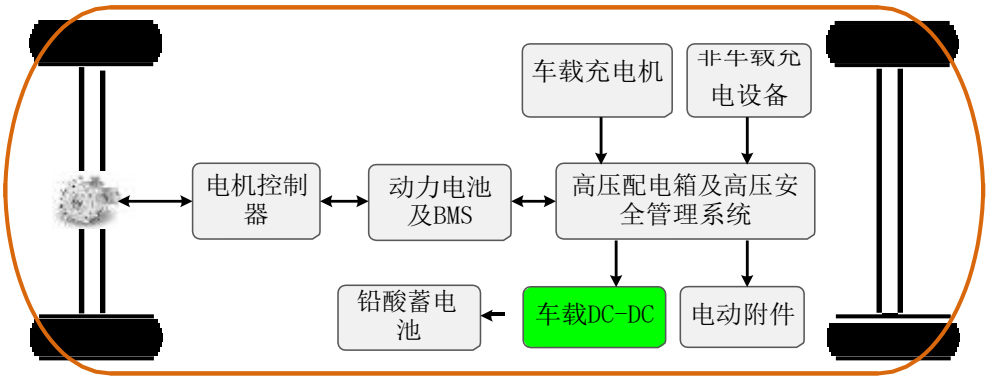
https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

Signal Description	
	
	

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

5. User Guide

5.1. Electrical connection diagram



5.2. Product Installation

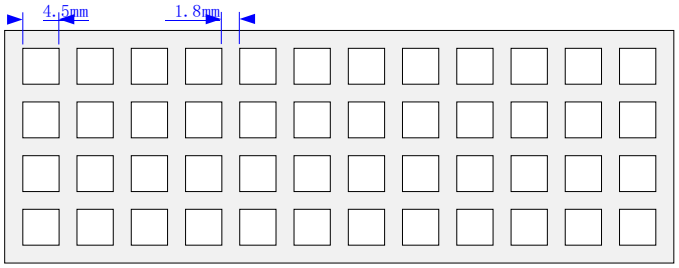
5.2.1. Flatness of mounting table: The flatness of the power mounting table is required to be ≤0.2mm.

5.2.2 Thermal conductive material: Apply thermal conductive silicone grease to the bottom of the power supply heat sink, and the thermal conductivity of the silicone greaseshould be ≥1.0W/m.K.

5.2.3 Clean the installation surface: The bottom of the power supply heat sink and the corresponding power supply mounting table surface are clean and free of foreign matter.

5.2.4 Template printing: Use steel mesh printing to apply thermal grease to the bottom Of the power supply heat sink.

The recommended steel mesh thickness is 0.45mm, and the window opening rate is about 50% (the square window is 4.5mm*4.5mm, and the interval is 1.8mm). As shown in the figure.



525. After printing the thermal grease on the bottom of the power supply heat sink, place the power supply on the mounting table, apply appropriate pressure, and move the power supply slightly back and forth and left and right to evenly distribute the thermal grease and fill the gap.

526. Align the mounting holes, tighten the fixing screws, and secure the power supply. The number of screws and recommended screw types are shown in the following table.

Mounting Screws	Mounting hole diameter	**Φ6.3**
	Number	**4**
	Recommended screw type	**M5 hexagon socket combination screw**

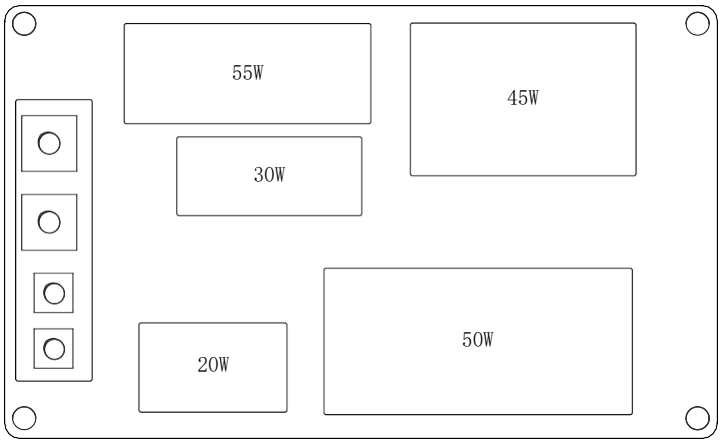
https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

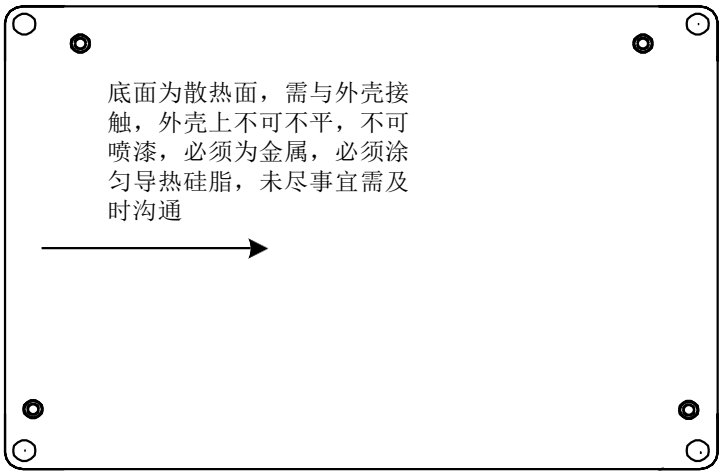
5.2.7Tightening torque requirements: Use appropriate torque for installation based on screw size, connection method, etc. See the table below for details:

Specifications		Tightening torque (torque range: ±10%)/(unit: Kgf.cm)						
Major categories	Subclass	Plastic-Plastic	Steel-Plastic Copper-Copper	General Connections		High density connection		
				Steel-Steel	Copper-cast aluminum Steel-aluminum profile	Steel-steel	Steel-cast aluminum Steel-copper	Steel-Aluminum Profile
Hexagon socket screw	M3	1.5	3	5.5	5	10	8	6
	M4		6	12	10	16	14	12
	M5		10	20	13	30	28	20
	M6		15	30	28	50	48	30
	M8					80	80	-

5.3 Thermal Design Guidelines

Thermal distribution diagram (top view)





① The heat dissipation shell can be designed through theoretical calculation or thermal simulation, and the actual measurement of the point temperature meter shall prevail.

② At rated input and rated output, the maximum temperature of each point on the radiator surface minus the ambient temperature should be ≤40℃ after 1 hour.

③ The heat dissipation contact surface between the radiator and the module should be flat, smooth, free of foreign matter and oil. The contact surface should be seamless when placed naturally.

④ If the radiator is a cast aluminum part, the contact surface between the radiator and the module aluminum groove must be CNC processed to ensure good contact.

⑤ The contact surface between the modular radiator and the module should be evenly coated with silicone grease in an appropriate amount.

⑥ When designing the radiator, ensure that the thickness of the radiator at the contact surface between the module and the radiator is greater than or equal to 4mm.

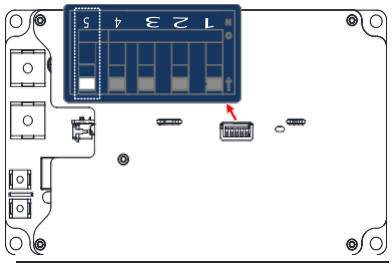
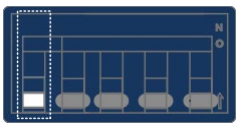
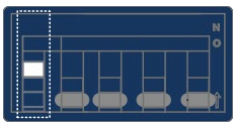
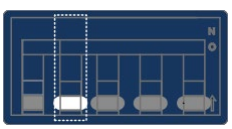
5.4 CAN Communication Protocol

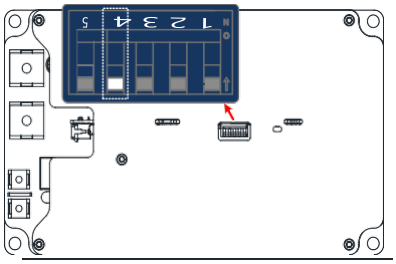
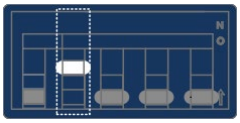
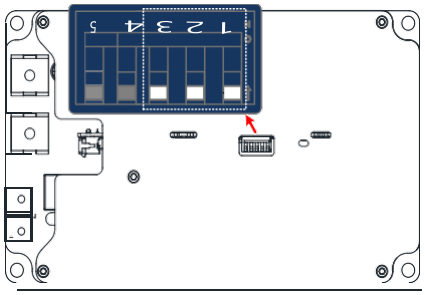
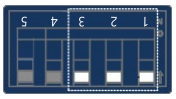
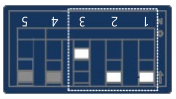
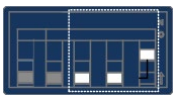
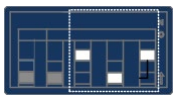
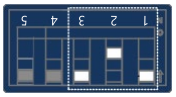
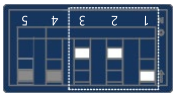
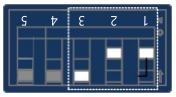
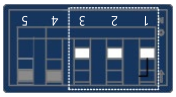
project	Technical indicators	Remark
Crystal	± 0.15%	In the operating

tolerance		temperature range
Communication rate	**Configurable through background software, configuration will not be lost after power failure**	Tolerance is ±0.375 Kbit/s
Sampling point	The sampling point should be set close to but not later than 7/8 of the bit time.	
Transceiver	Maximum transceiver "ring delay" (from transmit to receive) is 300 ns	CAN transceivers should comply with ISO 11898-2 standard
Terminal resistance	**The DC-DC CAN communication circuit does not have a 120 ohm terminal resistor by default.**	
Default CAN communication protocol	TBD	

5.5 Multi-machine parallel operation instructionsDCDC

The module has its own CAN bus current sharing logic, which can achieve current sharing without master-slave for up to 8 units. The current sharing modules must be of the same model, and the addresses must be assigned through the DIP switches on the modules. The DIP switch positions and address assignment tables are as follows:

DIP switch position 5 (hard line enables negative pole common ground)	DIP switch status	Hard-wire Enable Negative Pole Description
		**Default state: Hard-wired enable negative pole is independent and does not share the same ground with the power output negative pole**
		**Hard-wired negative pole and power output negative pole are forced to share the same ground**
DIP switch position 4 (terminal resistance selection)	DIP switch status	Terminal resistance description
		**Default state: DCDC CAN interface No 120R terminal resistor**

<table>
<tr><td>  </td><td>  </td><td colspan="3">DCDC CAN interface
With 120R terminal resistor</td></tr>
<tr><td>DIP switch position 3.2.1 (current sharing address selection)</td><td>DIP switch status</td><td>Address code</td><td>DIP switch status</td><td>Address code</td></tr>
<tr><td rowspan="4">  </td><td>  </td><td>0</td><td>  </td><td>4</td></tr>
<tr><td>  </td><td>1</td><td>  </td><td>5</td></tr>
<tr><td>  </td><td>2</td><td>  </td><td>6</td></tr>
<tr><td>  </td><td>3</td><td>  </td><td>7</td></tr>
</table>

5.6Background debugging software description

Backend software coding	2001 Setup V2.0	
Backend software communication method	CAN communication	Baud rate 125K/250K/500K adjustable
Installation and usage help		
Support CAN box Brand 1	1. 北京爱泰 USBCAN-2I 2. 北京爱泰 USBCAN-I	
Support CAN box Brand 2	TBD	

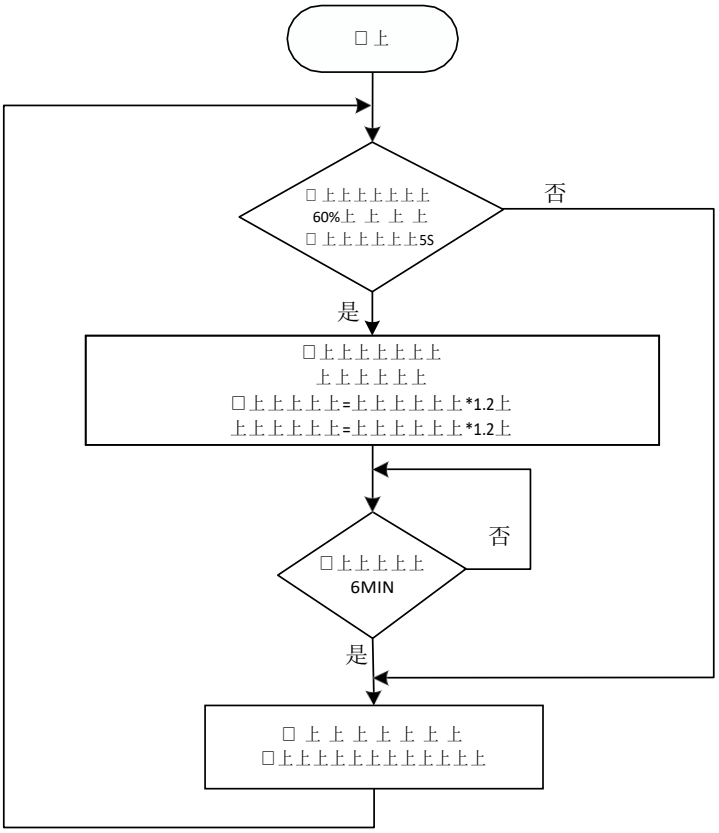
https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

5. 7 Troubleshooting and confirmation

Fault phenomenon	Common causes of failure	troubleshooting
No power output	High voltage input is abnormal (no or reverse connection)	Check whether the high voltage input is normal
	12V voltage input port is abnormal (no voltage, over/under voltage, reverse connection)	Output circuit breaker Check whether the 12V voltage input port is normal
	Output disconnection	Check if the output connection is normal
DC-DC No message	The signal connector is not connected properly	Reseat the signal connector
	CAN line is connected reversely	Adjust the CAN line sequence
	Communication protocol does not match	Compare whether the protocols match
	Baud rate mismatch	Compare baud rates to see if they match
The high voltage input fuse of the power distribution box is damaged. The product reports a fault signal.	Input short circuit	Check whether the high voltage input is normal
	Input over/under voltage, output over/under voltage, over temperature, output short circuit/over current	Check input voltage, output for overcurrent/short circuit, turn off power, let stand for 10 minutes, if still faulty, contact the manufacturer.
Over temperature fault	Air-cooled machine: fan is blocked or air duct is blocked	Check the fan and air duct
	Water-cooled machine: no coolant or coolant temperature is too high	Check whether the coolant is normal

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

5.8 Peak Power Logic



https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

6. User Notice and Precautions

Please pay attention to the warnings and precautions before using the product. Improper operation may cause power shock damage or fire. Please make sure you have read the warnings and precautions before using the product.

Warning:

It is strictly forbidden to disassemble the product for repair, debugging, and modification without authorization;

When the power is on, please keep your hands and face away from the product to avoid accidental injuries;

There is high voltage and high temperature inside the product. Please do not touch the internal components, which may cause electric shock or burns;

During use, if there is an abnormal sound or odor from the power supply, please turn off the input immediately;

Connectors that meet the specifications must be used to ensure that each plug and socket is tightly connected. Looseness may cause local heating and fire;

Please use the power supply within the technical parameter range. If it is used beyond the range, it may cause product damage;

Please avoid placing the product in a rainy place for a long time;

Please confirm that the casing is intact before installation. If it is damaged, please replace it immediately or contact the manufacturer.

Note:

Confirm that the product input/output terminals and signal terminals are correctly connected according to the product manual; when wiring, please cut off the input power and never plug or unplug the connector with power on;

This power input/output terminal requires an external fuse or other overcurrent protection device;

The possible electrical hazards at the output terminal when the product is used must be considered to ensure that the end product user will not touch the product; the terminal equipment manufacturer must design a corresponding protection plan to ensure that there will be no danger due to accidental contact between the power terminal by engineers or tools during operation;

Once the safety protection of the equipment is damaged, the equipment must be stopped and handled in accordance with relevant maintenance regulations.

When the power supply equipment is transferred from a cold environment to a warm environment, condensation may cause leakage hazards, so the grounding requirements must be strictly enforced;

Only qualified personnel can connect the equipment to the power supply.

After cutting off the power supply, the machine must be shut down for five minutes to allow the capacitor to have sufficient discharge time before the power supply equipment can be maintained.

Pay attention to safety in use: avoid touching with your hands where there are safety warning signs and high-voltage signs to avoid electric shock and burns.

7.**Reference standards and specifications**

GB 14023-2011 Limits and measurement methods of radio disturbance characteristics of vehicles, ships and devices driven by internal combustion engines

GB/T 17626.2-2006 Electromagnetic compatibility test and measurement technology Electrostatic discharge immunity test

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

GB/T 17626.3-2006 Electromagnetic compatibility test and measurement technology Radio frequency electromagnetic field radiation immunity test
GB/T 17626.4-2008 Electromagnetic compatibility test and measurement technology Electrical fast transient pulse group immunity test
GB/T 17626.5-2008 Electromagnetic compatibility test and measurement technology Surge (impact) immunity test
GB/T 17619 1998 Electromagnetic radiation immunity limits and measurement methods for electronic and electrical components of motor vehicles
GB/T 18384.3-2015 Electric vehicles Safety requirements Part 3: Personnel protection against electric shock
GB/T 18387-2008 Limits and measurement methods of electromagnetic field emission intensity of electric vehicles, broadband, 9KHz～30MHz
GB/T 18487.2-2001 Electric vehicle conductive charging system Electric vehicle and AC and DC power supply connection requirements (doc)
GB/T 18487.3-2001 Electric vehicle conductive charging system Electric vehicle AC and DC charger (station) (doc)
GB/T 18488.1-2015 Drive motor system for electric vehicles Part 1: Technical conditions
GB/T 18655-2010 Measurement, ship and internal combustion engine radio disturbance characteristics for protection of vehicle receivers Limits and measurement methods
GB/T 19826-2014 General technical conditions and safety requirements for DC power supply equipment in power engineering
GB/T 21437.2-2008 Road vehicles caused by conduction and coupling of electrical disturbances Part 2: Electrical transient conduction along power lines
GB/T 2423.1-2008 Environmental testing for electric and electronic products Part 2: Test methods Test A: Low temperature
GB/T 2423.2-2008 Environmental testing for electric and electronic products Part 2: Test methods Test B: High temperature
GB/T 2423.3-2006 Basic environmental testing procedures for electric and electronic products - Test Ca: Steady-state damp heat test method;
GB/T 2423.4-2008 Basic environmental testing procedures for electric and electronic products - Test Db: Cyclic damp heat test method
GB/T 2423.5-1995 Environmental testing for electric and electronic products, Part 2: Test methods/Test Ea and guidance: Shock
GB/T 2423.6-1995 Environmental testing for electric and electronic products, Part 2: Test methods/Test Ea and guidance: Collision
GB/T 2423.8-1995 Environmental testing for electric and electronic products, Part 2: Test methods/Test Ed: Free fall
GB/T 2423.10-2008 Environmental testing for electric and electronic products, Part 2: Test methods/Test Fc and guidance: Vibration (sinusoidal)
GB/T 2423.22-2012 Environmental testing for electric and electronic products, Part 2: Test N: Temperature change
GB/T 24347-2009 Electric vehicle DC/DC converter
GB 4208-2008 Degrees of protection provided by enclosures (IP code)
QC/T 413-2002 Basic technical requirements for automotive electrical equipment
GB 9254-2008 Limits and measurement methods for radio disturbances of information technology equipment
提供意見
側邊面板

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

翻譯記錄

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

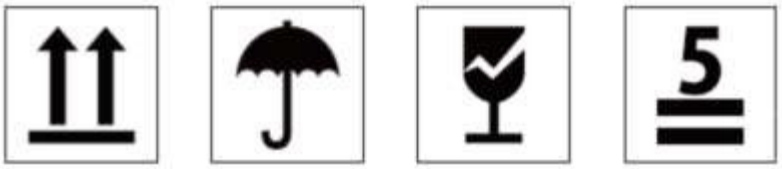
8. Stored packaging, transportation, storage

Product packaging information is as follows:

Packing quantity and box information	Single module net weight Kg	**2.2Kg**
	External dimensions of packaging box (mm)	**412*512*227**
	Number of modules per box	12
	Total weight after packaging Kg	28Kg

The packaging box should have the product name, product model, and manufacturer name; the technical documents supplied with the product in the packaging box should include the product factory certificate.

The product should be transported in a sturdy packaging box, and the outer packaging box should comply with the relevant national standards and should have signs such as "handle with care" and "moisture-proof". The packaging box containing the product is allowed to be transported by various means of transportation. During transportation, direct rain and snow and mechanical impact should be avoided. The transportation mark is attached, as shown in Figure 7-2 below:



Transport signsWhen the product is not in use, it should be stored in the packaging box. The warehouse environment temperature is -10-40℃ and the relative humidity is not more than 80%. No harmful gases, flammable and explosive products and corrosive chemicals are allowed in the warehouse. There is no strong mechanical vibration, impact and strong magnetic field. The packaging box should be at least 20cm above the ground and at least 50cm away from the wall, heat source, window or air inlet. The storage period under the specified conditions is generally 2 years. After more than 2 years, it should be re-inspected.

The product should be stored in a ventilated and dry place. At the same time, it must be kept away from high temperature sources, fire sources and chemicals. Store neatly and avoid throwing and smashing.

https://www.annren.com
e-Mail：sales@annren.com
TEL：+886-6-313-0155 FAX：+886-6-313-0225
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

9. Version update history

date	Version	Reason for change	Remark
2017/4/7	V1.0		
2018/3/23	V1.1	Add module heat distribution diagram	
2019/4/2	V1.2	Update parameter table	
2020/9/2	V1.3	Updated dimensional drawings	
2020/11/10	V1.4	Update weak current connection definition	
2022/11/30	V1.5	Update signal connector	
2022/10/25	V1.6	Add CAN communication terminal resistance description	
2023/08/12	V1.7	Updated the format and added chapters such as User Instructions.	
2024/1/23	V1.8	Control terminal ①-4 is changed to 8-32VDC auxiliary power supply	
2024/3/6	V1.9	Updated fan drive circuit diagram	
2024/4/9	V2.0	Update output characteristic curve	
2024/4/20	V2.1	Update output power parameters	
2024/6/26	V2.2	Add TR2002 selection parameters	
2024/9/10	V2.3	Update parameter table to add static power consumption and other parameters	
2024/9/12	V2.4	Update parameter table	
2024/11/9	V2.5	Update signal plugin definition and add option to enable different grounds	
2024/1/17	V2.6	Added TR2004 parameter list	
2024/2/14	V2.7	Added TR2008 TR2009 parameter list	