



Founded in 2013, SiAECOSYS have been dedicated in EV industry for 10 years, from promoting motors with QS brand, to other components supply and power train development, as well as entire vehicle development. The main production and activities are related to medium/high speed electric motor cycles, electric tricycles and mini cars.

SiAECOSYS - HEADQUARTERS

Taizhou · China

◆ SiAECOSYS Business Segments

- ▶ By 2022, SiAECOSYS have formed below segments:
- ▶ SiAECOSYS Headquarters (Tengda Center, Taizhou City)
- ▶ SiAECOSYS Vehicle R&D Center (Taizhou Innovation Center, Taizhou City)
- ▶ Vehicle MFR&Assembly Base (Taizhou, Joint with Geely Group)
- ▶ SiAECOSYS Hangzhou (SEVS, Hangzhou City)
- ▶ Global Service & Marketing Center (Being setup in CA, USA)

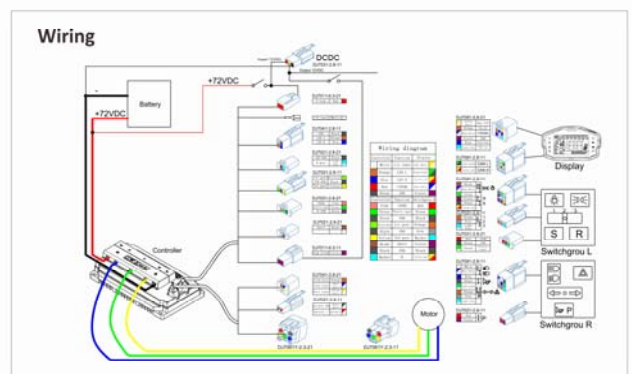
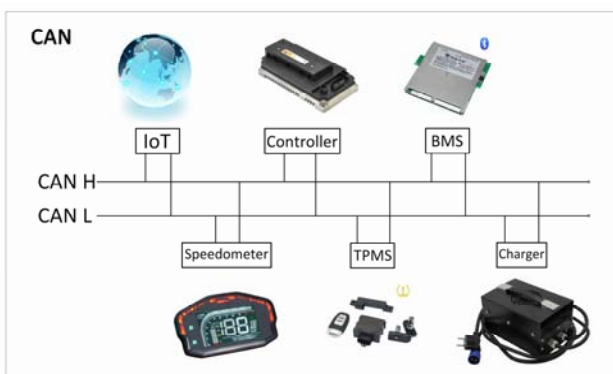
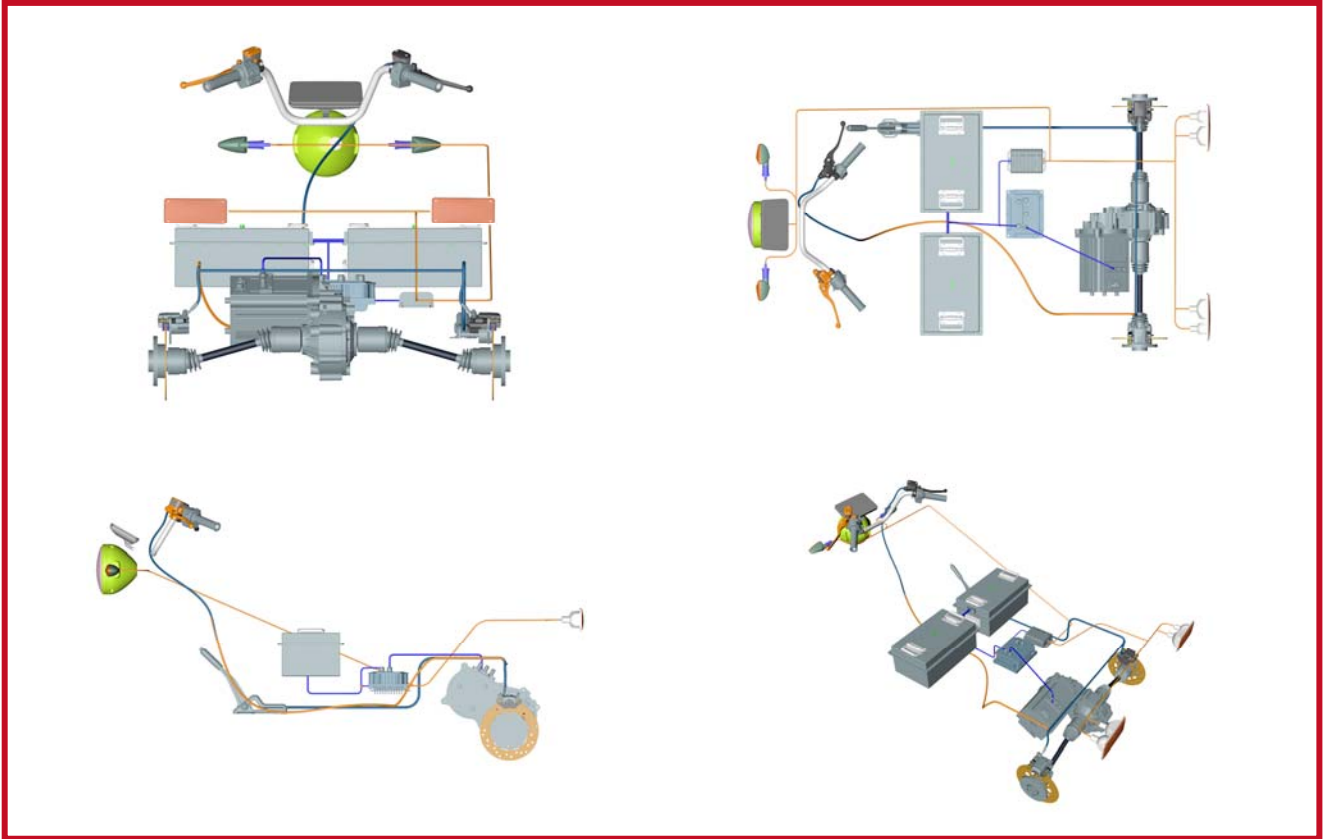
◆ SEVS Segment of SiAECOSYS

Acting as a Smart Electric Vehicle Solution provider, SEVS are particularly dedicated in projects of Electric Tricycles and other Mini or Low/Medium Speed Vehicles.

The activities cover:

- ▶ R&D Contractor of E.V Power Train Development
- ▶ Technology Outsourcing for Entire Vehicle Development
- ▶ Complete Service from Solution to Supply Chain Management
- ▶ Lithium Battery & Charging Arrangement
- ▶ Full Range of Equipment & Hardware Involved
- ▶ IoT & Intelligent Solutions
- ▶ Battery Swapping Solutions
- ▶ Other Custom Solutions

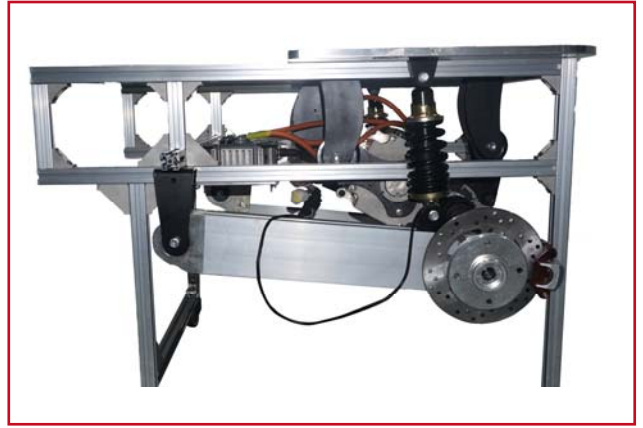
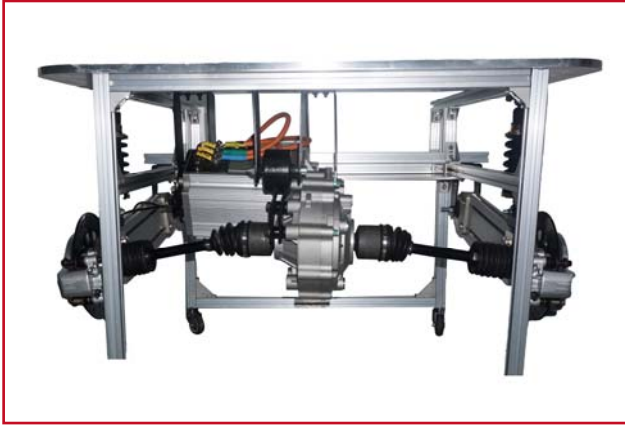
ELECTRIC POWER TRAIN



SEVS Segment of SiAECOSYS are dedicated in power train development for electric tricycles and other mini or low/medium speed electric vehicles.



ELECTRIC POWER TRAIN



Electric Motor

PMSM / AC 3kW-15kW

Gear Box

Custom Speed Reduction Ratio

Motor Controller

Brake Energy Regeneration, HSA

Mechanical Sector

Semi Axle / Rear Bridge

Smart System

CAN Bus, BMS, VCU & IoT

Digital Display

LCD TFT



Lithium Battery

BMS, Module Supporting Quick Swapping

Fast Charger

Single Charger / Charging Cabinet



ELECTRIC CONVERSION KIT



Electric Motor

PMSM / AC 3kW-6kW, IP 65/67 Optional

Gear Box

Heavy Duty, 80 km/h Max

Motor Controller

PMSM / AC 3kW-6kW

Support CANBUS Communication



DC-DC Converter

Power 360W

Output Voltage 13.8~14.3V

Output Current 0~30A

Digital Display

LCD TFT

Support CANBUS Communication



Lithium Battery

Rated Voltage: 60.8V

Typical Capacity: 45Ah

Standard Chg Current 10A

Standard Dsg Current: 45A

Support Quick Swapping

Fast Charger

On board design

Charging current: 60V 10A

Support CANBUS Communication





ELECTRIC CONVERSION KIT



Mechanical Parts

Semi-Axles and Mounting Accessories
for 3KW-6KW Motor

Suit Regular Tuktuks

Electric Wire Harness

Matching with the Whole Electric System

Custom Option Available



Throttle with Gear Switch

Twist Throttle

D/N/R or Other Modes

Bluetooth Speaker

Compatible with the System Solution
Multi-functional

EMC Verified



Emergency Stop Button

Optional for Where Required to Comply With
the Safety Regulations.

Safety Device

Smart System

CANBUS, BMS, IOT & VCU

Can be Highly Customized





EV DEVELOPMENT

How WE work TOGETHER ?

Clients/Overseas Partner

SiAECOSYS-SEVS

Project Plan

Product Requirement

Vehicle Pattern Design
Performance Demands
Local Regulations
...

Products & Service

Technical Strength

Entire E.V Development
Power Train Development
System Matching &
Testing Program...



Resources

Commercial Capacity

Marketing Research
Sales Channel
Capital Support
...

Supply Chain

Complete Support

Over 70 Factories
Professional QA&QC
Exporting&Transport
...



Vision-Plan-Action-Efforts-Passion-Production-Running
Let EV Industry Improve Our Environment & Life!

SiAECOSYS - S.E.V.S



SMART ELECTRIC VEHICLE SOLUTION

sevs@siaecosys.com

Hangzhou · China

Product Specification

SEVS 4KW AC Motor Conversion Kits
For Tuktuk Electrification



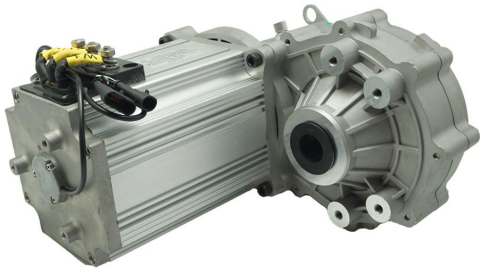


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AC 4KW Electric Motor(with gear box assembled)

Key Technical Parameters



Model: S-T-MT4000

Rated Power: 4.0KW

Rated Rotating Speed: 3000rpm

Nominal Torque: 12.7N.m

Rated Phase Current: 60A

Efficiency: >89%

Insulation Grade: H

Sensor Type: Hall Sensor

Rated Voltage: 60V/72V

IP Rate: IP55/65/67

Peak Power(10min): 8.0KW

Rated Rotating Speed: 6000rpm

Peak Torque: 82N.m

Peak Phase Current: 280A

Cooling Mode: Air cooling

Net Weight: 23.0KG

Operating Mode: S9

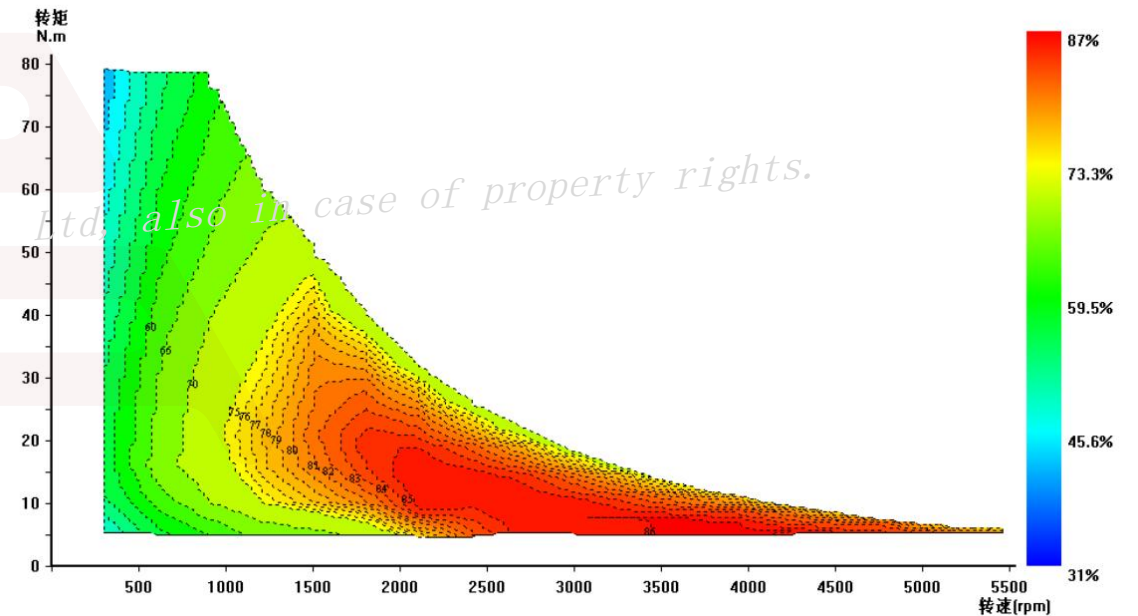


AC 4KW Electric Motor(with gear box assembled)

Motor Performance Curve

S/L	Input Voltage	Input Current	Input Power	Motor Voltage	Torque	Speed	Output Power	Motor Efficiency
	V	A	W	V	N.m	rpm	W	%
01	70.58	109.50	7729	0.459	78.0	300.1	2451	31.7
02	69.98	143.42	10037	0.608	77.4	599.8	4861	48.4
03	69.32	185.47	12837	0.868	77.9	904.2	7375	57.4
04	69.72	160.92	11219	0.985	60.4	1204.5	7617	67.9
05	69.70	159.24	11099	1.278	50.5	1500.3	7933	71.5
06	70.12	134.84	9455	1.867	26.4	1400.5	6335	70.2
07	70.29	122.25	8593	1.659	21.8	2700.0	6163	71.7
08	70.58	104.67	7388	2.063	17.6	3000.1	5528	74.8
09	70.65	101.29	7156	2.474	15.3	3299.6	5286	73.9
10	70.77	93.26	6600	2.279	13.1	3599.6	4937	74.8
11	70.94	86.5	6136	2.353	11.4	3899.3	4654	75.8
12	71.00	80.72	5731	2.230	9.9	4199.6	4353	76.0
13	71.18	71.24	5071	2.234	7.6	4799.3	3819	75.3
14	71.28	67.28	4796	2.009	6.8	5099.3	3631	75.7
15	71.32	63.87	4555	2.074	6.1	5399.5	3449	75.7

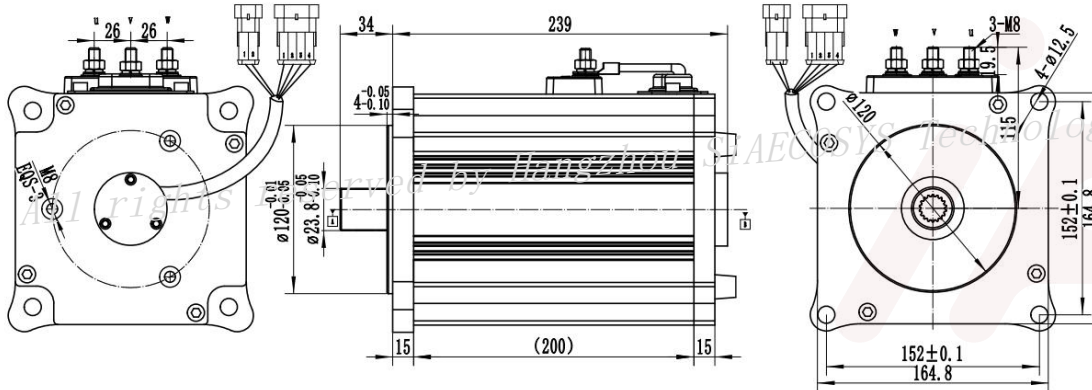
Motor Efficiency Map



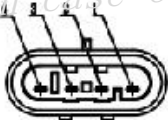
AC 4KW Electric Motor(with gear box assembled)

MECHANICAL CHARACTERISTICS

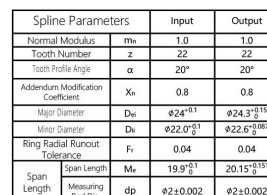
Overall Dimension



Pin Definition of Connector

Connector Type	Drawing	NO.	Definition	Wire Color	Wires Gauge
DJ7041-1.5-11		1	5V	Red	0.3mm ²
		2	Encoder A	Yellow	
		3	Encoder B	Green	
		4	GND	Black	
DJ7021-1.5-11		1	KTY84-150 Temp	White	0.3mm ²
		2	KTY84-150 Temp	Blue	

Gear Ratio can be customized according to different project.



TECHNICAL REQUIREMENT

- TECHNICAL REQUIREMENT**
 1. The test method shall be in accordance with SAE J2086-2011 "Test method for automotive mechanical gearbox assembly, Part 1: Micro", QCTP 2963-2011 "Technical Conditions for Automotive Mechanical Gearbox Assembly, Part 1: Micro" and "Technical Conditions for ITD08 Part Electric Vehicle Gearbox Assembly".
 2. The time to 50% life duration of the gearbox shall be greater than 80000 km.
 3. Max. working temperature allowed 110°C, noise level of forward and reverse rotation less than 75dB forward speed 6000r/min; reverse speed 3000r/min; measured at 30m from the gearbox (4 places).
 4. The parts required to be cleaned before assembly, joint surface and the processing surface shall be allowed to be knotted and bruised.
 5. Before the bearing press fitting, lubricating oil to be applied to the corresponding shaft. Before closing the box, lubricating oil needs to be applied to the corresponding housing hole. The oil used shall be the same as the oil used in the actual use.
 6. The joint surfaces of the front and rear shells should be evenly coated with sealant. The static sealing test requirements of the assembly: the inflation pressure not less than 0.025MPa, ventilation time 10s, pressure holding time 10s, pressure measurement 8s, pressure drop value less than 20%, no oil leakage should occur during off-shaft test, during off-shaft test, the oil leakage should be less than 0.05ml.
 7. After proper assembly, apply lubricating oil to the splines in the input shaft and the splines of the difference half shaft to prevent rust; correctly install the input shaft and the rear shaft and seal the input shaft and the rear shaft.
 8. The cleanliness of the assembly must be more than 120mg/m², and the specific testing should be performed in accordance with the requirements of QCTP 572, QCTP 573 and QCTP 575; the different assembly clearance should meet the specification requirements;
 9. 10. Unit net weight (weight of oil, accessories)

AC 4KW Controller

Key Technical Parameters



Model: S-T-MC4000

Nominal Voltage: DC 60V/72V

Rated. Output Current: AC 120A

Dimension: 195 x 165 x 100mm

Weight: 2.3kg

IP Rate: IP65

Cooling system: Air Cooling

Max. Output Current: AC 320A

Working Mode: FOC/Torque control

Communication: CAN2.0B

Controller Functions

Regenerative Braking

Over Current Cut Off

Bus Line Overvoltage Cut

Bus Line Low-Temp Protection

Bus Line Current Limit

Anti Slip Down Protection

Short Circuit Cut Off

Bus Line Undervoltage Cut

Bus Line Over-Temp Protection

Throttle Fault Detection

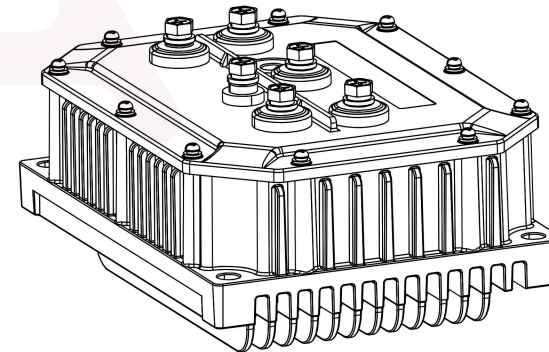
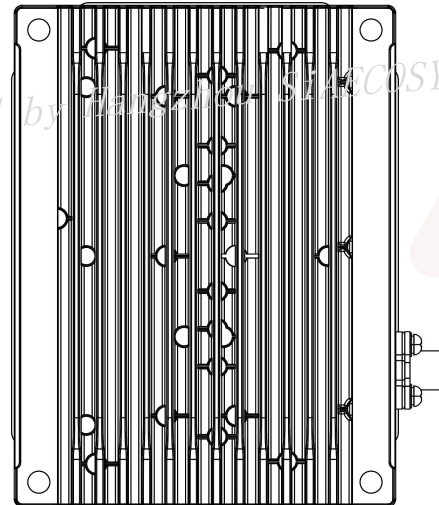
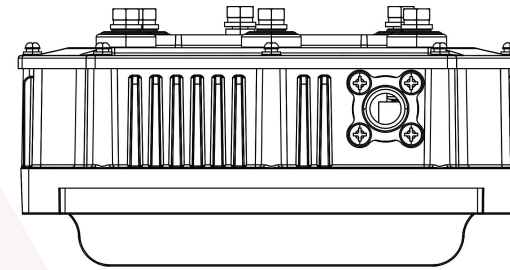
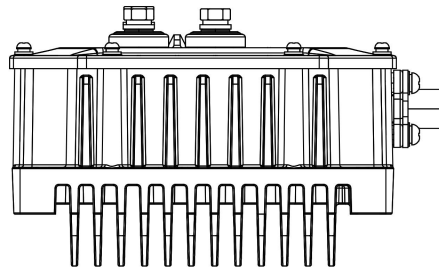
Soft Start

Boost Mode



AC 4KW Controller-MECHANICAL CHARACTERISTICS

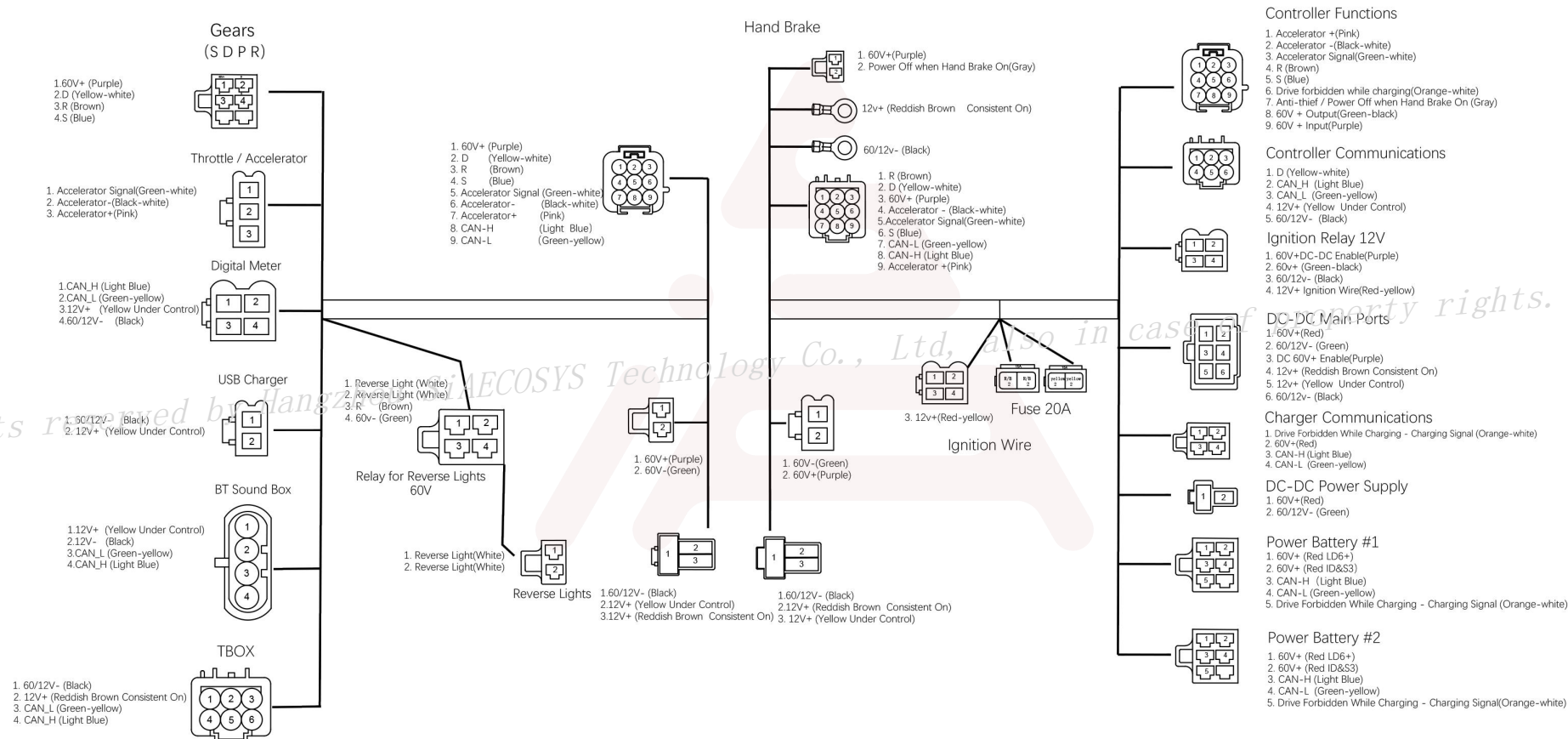
Overall Dimension



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AC 4KW Controller

Wiring diagram



Digital Meter

Key Features

Voltage Power display

Speed display

Power display

Gear display

Fault information display

Switchable to Night Mode

Communication: CANBUS 2.0B



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Faster Charger



Functions

- CAN BUS Interface is compatible
- Triple Colors Indicator is compatible
- Vehicle Charging Lock System is compatible
- Integrated with an auxiliary power supply for 12V

Key Features

AC Input Voltage Range: 85~264VAC; 45-65Hz

AC Input Max Current: 11.5A @120VAC; 6.1A @220VAC

Power Factor: ≥ 0.99

Efficiency: $\geq 95.0\%$

Noise: $\leq 45\text{dB}$

Protection level: IP67



Faster Charger-MECHANICAL CHARACTERISTICS

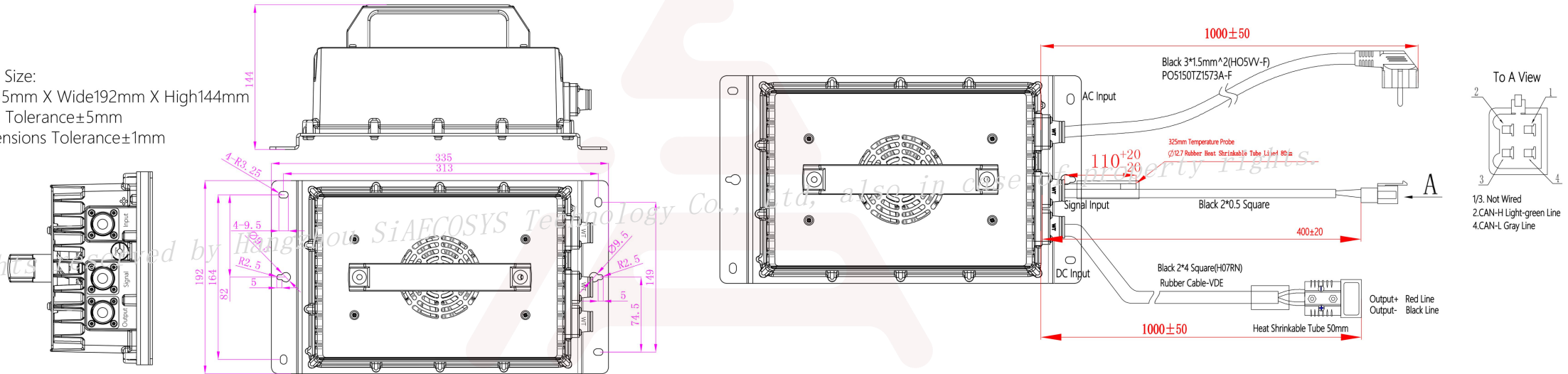
Overall Dimension

Maximum Peripheral Size:

Flat Stitching Long 335mm X Wide 192mm X High 144mm

External Dimensional Tolerance $\pm 5\text{mm}$

Mounting Hole Dimensions Tolerance $\pm 1\text{mm}$



60V45ah Lithium Battery

Key Technical Parameters

Cell Technology: ITR26/70-45E

Rated Voltage: 60.8V

Typical Capacity: 45Ah

Min. Capacity: ($\geq 95\%$) 42.75Ah

Operating Voltage: 38V ~ 67.45V

Waterproof level: IP65

Meet UN38.3 Vibration Test Standard

Good quality and resistant to falling, 1 meter high, 6 face drop test

With Waterproof Air Permeability Value, increase safety

Discharge Current 50A&100A

Support Dual Battery

Standard Chg Current: 10A Max. Chg Current: 15A Standard Chg: Constant Current, Constant Voltage (CC/CV) 10A until 67.45V

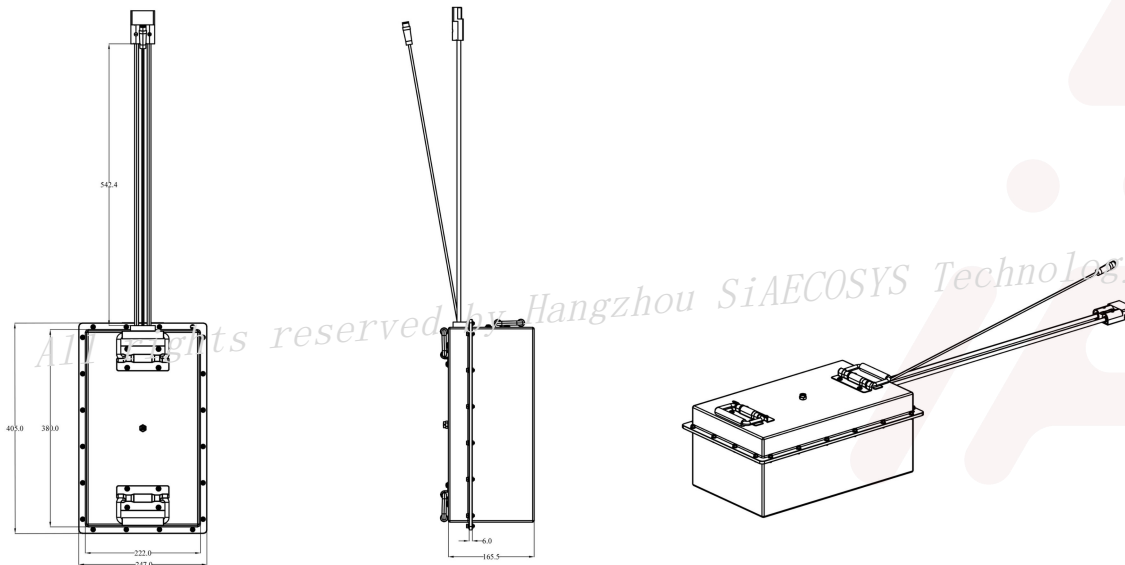
Standard Dsg Current: 45A Max. Dsg Current: 75A(30min) Standard Dsg: Constant Current (CC) 45A until 38V



60V45ah Lithium Battery

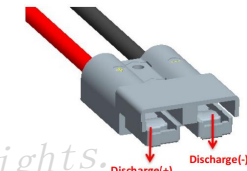
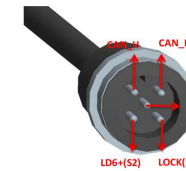
MECHANICAL CHARACTERISTICS

Overall Dimension



Pin Definition of Connector

Charge / Discharge port and Communication definition



Pin definition instructions

Charge/Discharge(+)	Charge/Discharge(Positive pole)
Charge(-)/ Discharge(-)	Charge/Discharge(GND)
CAN_L	CAN Communicate Port(CAN_L)
CAN_H	CAN Communicate Port(CAN_H)
LD6+(S2)	Discharge Detection
LOCK(S1)	Charger Signal Switch
S3	ID Signal

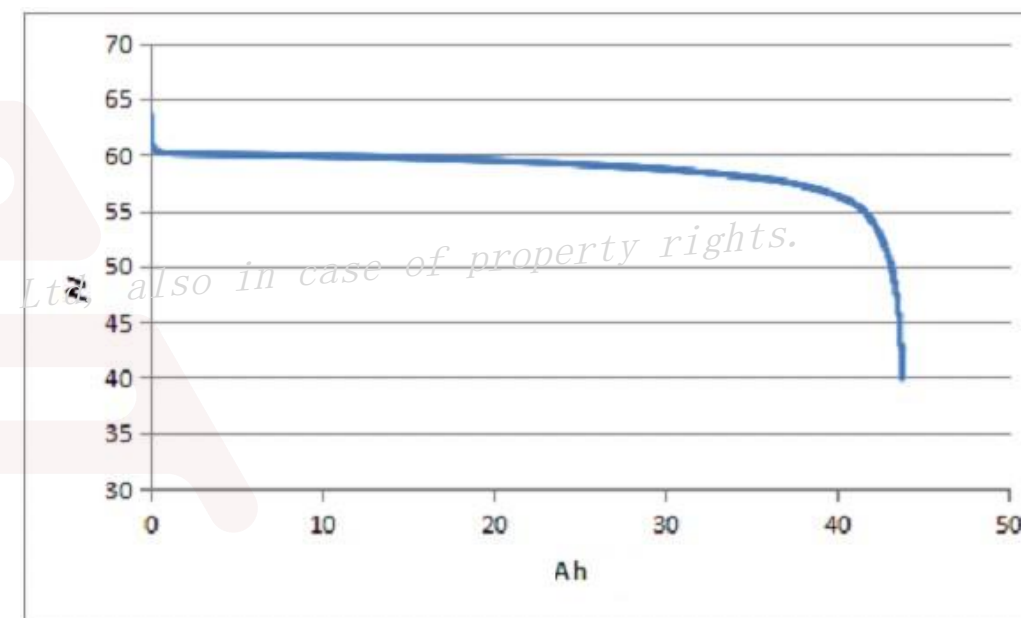
60V45AH Lithium Battery

ELECTRICAL CHARACTERISTICS

Battery Performance Curve



Discharge Graph



DC-DC Converter



Key Technical Parameters

Input Voltage: 42~86V

Output Voltage: 13.8v~14.3v $\pm$ 0.3V

Input Current: <6A(full loading)

Output Current: 0~30A

Operating frequency: 50KHz

Max. Power: 360W

Efficiency: >85%

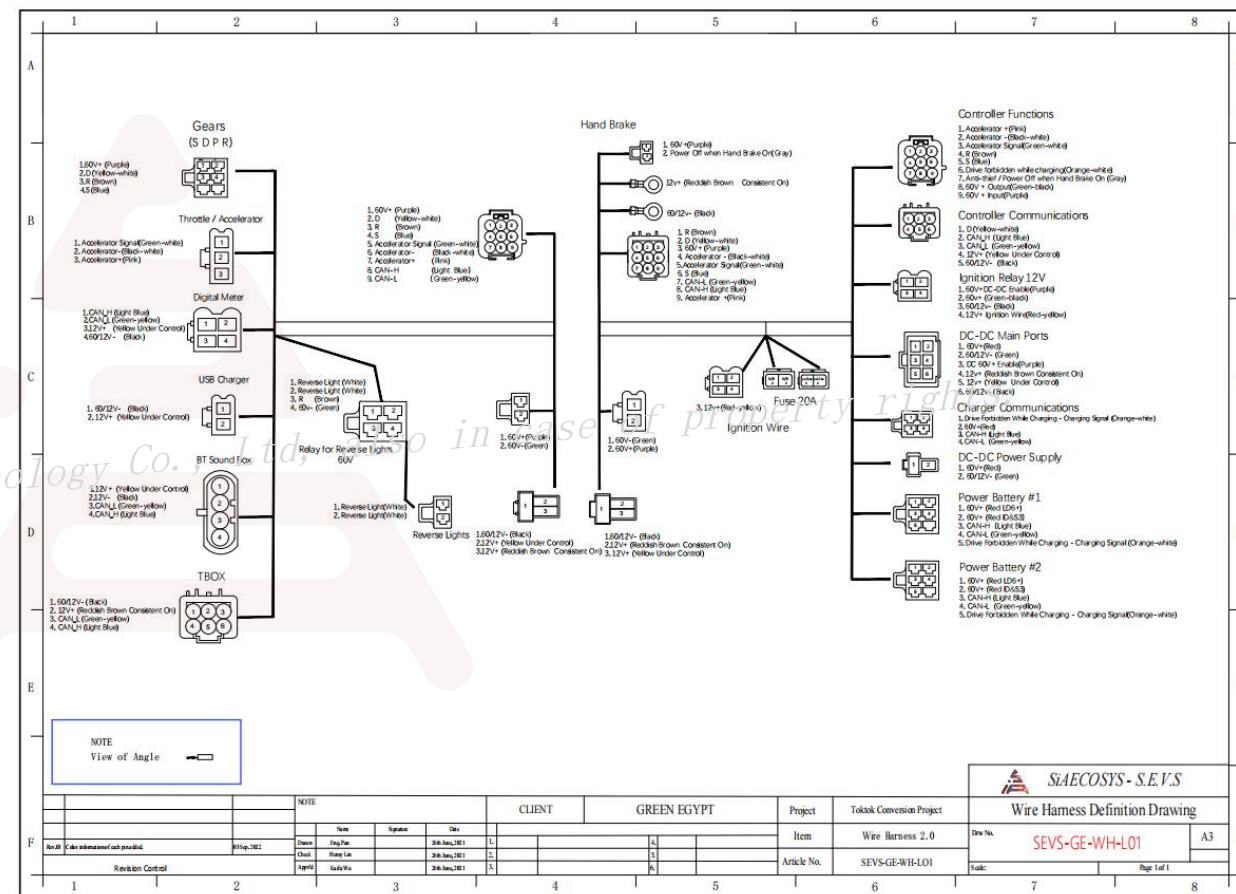
Waterproof level: IP67

Operating Temp: <80 degrees

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Wiring harness

Wiring diagram



Other Components



Blue Speaker



Emergency Stop Button



Semi Axle



USB Port



Throttle with gear switch



Limit Switch

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