

ELECTRIC VEHICLE CHARGER



CCS/CHAdeMO/GBT Models
On Board Chargers

Lakshmi Electrical Control Systems Limited is an ISO 9001, ISO 14001, OHSAS 18001 and 5s certified company established in 1983. Headquartered in Coimbatore, India, LECS has genesis in the Lakshmi group, a world leader in textile machinery. From inception, LECS has built renown in the design and assembly of Electrical Control Panels, Tools and Plastic Components. LECS, a public-listed company also has been a leading manufacturer of Charging Station Equipment.



LECS has developed a range of EV Chargers in Technology tie-up with a leading manufacturer in China. LECS has introduced various ranges of Chargers with respect to both AC chargers and DC chargers, manufactured as per Indian and International standards in a fully integrated manufacturing facility. The module is designed with resonance voltage type dual loop control switching power technology, featuring high efficiency, high reliability, small size, light weight and our models work with 3-phase, 415 VAC or 230 VAC inputs

Main Characteristics

- ▶ High efficiency, peak efficiency is more than 96%
- ▶ High power factor, low THD on input circuit
- ▶ Take digital current-sharing technology, current sharing imbalance <±5%
- ▶ Take CAN bus interface for communicating with computer monitoring unit

CHARGING MODULE OPTIONS

NO	PRODUCT	APPLICATION
1	10kW AC Type 2 Charger	2 Wheeler, 3 Wheeler
2	15kW DC Fast Charger	2 Wheeler, 3 Wheeler, Car
3	22kW AC Fast Charger	3 Wheeler, Car
4	50kW DC Fast Charger	Car, 4 Wheeler
5	120kW DC Fast Charger	Bus, Truck

CHARGING STATION OPTIONS

CODE NO	PRODUCT	COMBINATION
LEVC 01	120kW Fast Charger	50 kW CCS DC + 50 kW CHAdeMO + 50 kW GBT + 22 kW AC + 10 kW AC
LEVC 02	60kW DC Fast Charger	60 kW CCS DC Fast +GBT
LEVC 03	50kW DC Fast Charger	50 KW CCS DC Fast
LEVC 04	15kW Slow Charger	GB/T Slow Charge
LEVC 05	10kW Slow Charger	3.3 kW x 3 Guns

* Modular Charger combinations available upto 240 kw (2 guns x 120 kw) and 360 kw (3 guns x 120 kw) on request

	Type 1	Type 2	GB / T
AC			
DC			
COMBINED AC / DC			

SAE J1772 / IEC 62196-3

IEC 62196-3

DC FAST CHARGER SPECIFICATION

Charging Type	DC Fast Charge
Charging gun	CCS, CHAdeMO
Input Voltage	3Ph+N+PE, 415V, 50Hz, ± 20%
Charge voltage	200v - 500v
Charge current	3 A- 200A
Efficiency	>94%
Ingress Protection	IP 54
Communication	LAN/Wi-Fi/2G/3G/4G
Backend communication	OCPP 1.6 JSON
Dynamic Response	Recovery time >200 µS at 20% load transition 80% load, overshoot < ± 5%
Dimension (HxWxD) mm	1850 x 400 x 400
Mounting	Free standing



AC CHARGER SPECIFICATION

Charging Type	AC Charge
Input Voltage	3Ph+N+PE, 415V, 50Hz, ± 20%
Charge voltage	230Vac
Charge current	15 A (Max)
Efficiency	>92%
Ingress Protection	IP 54
Communication	LAN/Wi-Fi/2G/3G/4G
Backend communication	OCPP 1.6 JSON
Protection	OVP/UVP, Ground fault, Surge, Charging, Lightning, Leakage, Over Current, Over Temperature
Dimension (HxWxD) mm	700 x 300 x 400
Mounting	Wall mounting/Stand Mounting

Operating Environment

- » Altitude < 2000m;
- » Working Ambient Temperature
- 20°C ~ +55°C, Storage Ambient Temperature: -40°C ~+75°C;
- » Ambient relative humidity: < 95, non-condensing;
- » No conductive and explosive dust, no caustic gas, no strong shake



EV On-Board DC-DC Convertor

Product



LEQZD600-27

Parameter

Max output current	25A
Output voltage	24VDC
Power	600W
Max efficiency	≥94.5%
Voltage stabilization accuracy	≤±1%
Ripple	≤600mV
Input voltage	350-750VDC
Storage temperature	-40~90°C
Operating temperature	-40~85°C
Protection level	IP67
Cooling method	(Self-cooling)
Dimensions	192*142*75mm

Application



EV On-Board DC-DC Convertor

Product

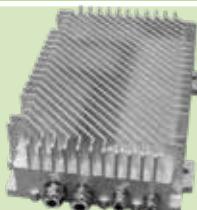


LEQZD1200-14(27)

Parameter

Max output current	105A(45A)
Output voltage	13.8VDC(27.5VDC)
Power	1.2KW
Max efficiency	93%
Voltage stabilization accuracy	$\leq \pm 1\%$
Ripple	$\leq 200\text{mV}$
Input voltage	250-450VDC
Storage temperature	-40~90°C
Operating temperature	-40~65°C
Protection level	IP67
Cooling method	(Self-cooling)
Dimensions	262*228*75mm

Product



LEQZD1800-14(27)

Parameter

Max output current	135A(65A)
Output voltage	13.8VDC(27.5VDC)
Power	1.8KW
Max efficiency	94%
Voltage stabilization accuracy	$\leq \pm 1\%$
Ripple	$\leq 400\text{mV}$
Input voltage	250-450VDC
Storage temperature	-40~90°C
Operating temperature	-40~65°C
Protection level	IP67
Cooling method	(self-cooling)
Dimensions	334*229*88mm

Application



EV On-Board DC-DC Convertor

Product



LEQZ3000-27

Parameter

Max output current	110A
Output voltage	27.5VDC
Power	3KW
Max efficiency	95%
Voltage stabilization accuracy	$\leq \pm 1\%$
Ripple	$\leq 270\text{mV}$
Input voltage	200-450VDC/380-750VDC
Storage temperature	-40~90°C
Operating temperature	-40~65°C
Protection level	IP67
Cooling method	(self-cooling)
Dimensions	355*300*130mm

Application



EV On-Board Charger -- Water Cooled

Product	Parameter	Application
 LEQLZ6600-420S	Max output current 19.35A Output power 6500W+100W Output voltage 190-420VDC Power 6.6KW Highest efficiency 96% Regulator accuracy $\leq \pm 0.5\%$ Steady flow accuracy $\leq \pm 1\%$ Power factor >0.99 THDI <3%(Rated) Input voltage 176-264VAC Storage temperature -40~95°C Operating temperature -40~65°C Protection level Ip67 Cooling type (Liquid cooling) Auxiliary voltage 13.8VDC Pavement power 100W Dimensions 328*254*67mm	 
 LEQLZ3300-440S	Max output current 11A Output power 3300W Output voltage 240-420VDC Power 3.3KW Highest efficiency 96% Regulator accuracy $\leq \pm 0.5\%$ Steady flow accuracy $\leq \pm 1\%$ Power factor >0.99 THDI <3%(Rated) Input voltage 85-264VAC Storage temperature -30~95°C Operating temperature -20~85°C Protection level Ip67 Cooling type (Liquid cooling) Dimensions 252*158*64mm	 

Fuel cell DC-DC charging

Product



LE2017223

Parameter

Maximum output current	180A
Output voltage	450-750VDC
Power	80KW
Highest efficiency	97%
Regulator accuracy	$\leq \pm 0.5\%$
Steady flow accuracy	20%-100% (Load) $\leq \pm 1\%$
Input voltage	250(450)VDC
Storage temperature	-40~105°C
Operating temperature	-40~85°C
Protection level	IP67
Cooling method	(Liquid cooling)
Operating humidity	5%—95% (No condensation)
Dimensions	500*420*180mm

Application



five in one integrated control unit

Product



LE-KTZ54X32S-K1P1B

Parameter

Bus input voltage level	540V DC
Bus input voltage	DC 420V-720V
Controller protection level	IP67
Main motor controller power	110KVA/85kW/160A RMS
Oil pump motor controller power	5.5KW/13A RMS
Air pump motor controller power	5.5KW/13A RMS
Power	2KW/143A/14V
PDU function	(Defrost)、(Electrical heating)、(A/C) , (QuickCharge) , (Insulation testing) , (Relay state-feedback) (etc)
Insulation detection	0~50M(insulating fault)
Cooling type	(Water cooling) , 8~12L
Tap diameter	25mm
Communication type	CAN 2.0
System low-voltage control power	DC 8~12V , 24V(compatible)
Pre-charge and discharge circuit	(Inside) (buffer resistance)100Ω /50W
Operating temperature	-40~85°C
Storage temperature	-40~105°C
Operating humidity	5~95%
Dimensions	650*495*180mm
Weight	25kg

Application



four in one integrated control unit

Product



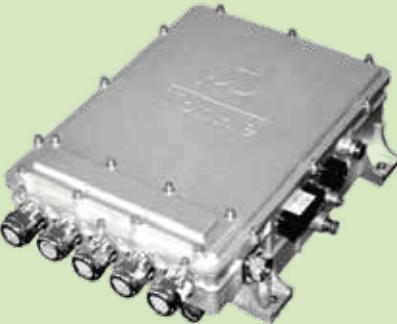
LE-KTZ54W01S-T1J2B

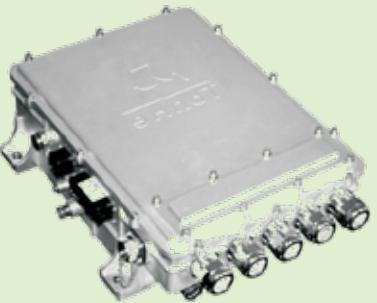
Parameter

Bus input voltage	400~750V DC
Bus input current	160A
Low voltage input	16~32VDC
Suitable motor	(three-phase asynchronous)/(synchronous)
Rated power	5.5KW
Peak power	7.5KW
Three-phase output voltage	0~400V AC
Rated output current	13A
Peak output current	19.5A
Rated output power	3KW
Peak output power	3.5KW
Rated output voltage	27.5VDC
Rated output current	110A
Effectiveness	95%
Master insurance	400A/700VDC
Master contactor	300A/700VDC
Fast charge insurance	400A/700VDC
Fast charge contactor	300A/700VDC
Oil pump&air pump insurance	32A/700VDC
Oil pump&air pump contactor	40A/700VDC
Dimensions	530*345*169mm
Protection level	IP67
Operating temperature	-40~85°C
Operating humidity	5~95%

Application



Motor Controller	
Product	
 LE-KTZ54W21S-A1P1B LE-KTZ54W32S-A1P1B LE-KTZ54W40S-A1P1B	
Parameter	
Rated Capacity	75KVA/110KVA/140KVA
Peak capacity	150KVA/220KVA/280KVA
Bus input voltage range	240~720V DC
Bus input current	105A/160A/200A
Three-phase output voltage	0~380V AC
Rated output power	60KW/90KW/120KW
Rated output current	105A/160A/200A
Peak output current	210A (1min) /320A (1min) /400A (1min)
Max efficiency	98%
Output frequency	0 ~ 400Hz
Protection level	IP67
Operating temperature	-40~85°C
Storage Temperature	-40~105°C
Operating humidity	5~95%
Dimensions	320*280*123mm/345*280*123mm/ 370*280*123mm
Application	
	

Motor Controller	
Product	
	LE-KTZ36W21S-A1P1B LE-KTZ36W32S-A1P1B LE-KTZ36W40S-A1P1B
Parameter	
Rated Capacity	45KVA/70KVA/90KVA
Peak capacity	90KVA/140KVA/180KVA
Bus input voltage range	240~420V DC
Bus input current	105A/160A/200A
Three-phase output voltage	0~380V AC
Rated output power	40KW/60KW/80KW
Rated output current	105A/160A/200A
Peak output current	210A(1min)/320A(1min)/400A(1min)
Max efficiency	98%
Output frequency	0 ~ 400Hz
Protection level	IP67
Operating temperature	-40~85°C
Storage Temperature	-40~105°C
Operating humidity	5~95%
Dimensions	320*280*123mm/345*280*123mm/ 370*280*123mm



Auxiliary controller	
Product	
	LE-KTZ36X01S-B2J2B LE-KTZ54X01S-B2J2B LE-KTZ36X02S-B2J2B LE-KTZ54X03S-B2J2B
Parameter	
Cooler capacity	3.7KVA/5.5KVA/9KVA/14KVA
Cooling method	(Self-cooling) / (force-air cooling)
Rated input voltage	336V/540V/540V/540V
Operating voltage range	400~720V
Rated output voltage	220V/380V/380V/380V
Output current	8A/8A/13A/21A
Protection level	IP67
Max efficiency	98%
Matching motor power	2.2KW/3.7KW/6KW/10KW
Operating temperature	-40~85°C
Storage temperature	-40~105°C
Application	
	
	

The LECS Squadron...



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