



ELECTRIC VEHICLE CHARGERS & SOLUTIONS

Klineex Co., Ltd.
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Certifications and Intellectual Properties



Established
2014.11.01



Factory
2015.06.15



R&D Lab.
2015.09.11



Electricity Install. License
2017.10.31



InnoBiz Certified
2018.03.29



Excellent Co. Award
2018.12.10



MoSMB Award
2018.12.13



ISO 9001 Qualified
2018.12.24



ISO 14001 Qualified
2018.12.24



SG NewBiz License
2019.04.29



VentureBiz Certified
2019.04.29



ICT Install License
2019.05.24

R&D Company which has all kinds of EV Chargers & Solutions

Multi-, Slow-, Mid-, Fast- Speed Chargers
Development, Manufacturing
and Operation Technologies



Server Development
and Operation Expertise

BEMS Control and Automobile-linked
Charging Open Protocol →
Development of an EV Charging System
for Export

Standardization of Charger Operation
(Linked to Electricity System)

Resolution of Inconveniences
in Using Chargers
(Integrated Management of Chargers)

International Standard Base
(for Sales Abroad)

R&D Personnels

- ▶ Our R&D team is comprised of engineers who are able to design Communication systems and embedded system boards. They are able to carry out parts analysis and optimized designs to prevent failures from happenings
- ▶ Most of the researchers have experience of working for more than 20 years at the Information Communication Research Center at “L group”, and have expertise in communication environment, electricity safety, credibility and ROHS

R&D Results

- ▶ Core technologies for designing communications software optimal for developing and commercializing hardware, software, firmware and equipment.
- ▶ Core technologies for software design through developing web servers operated abroad
- ▶ Development and application for different protocols needed for the various communication environments abroad
- ▶ Chargers are being supplied to seven Ministry of Environment authorized companies and other two major companies (KEPCO and Korea Environment Corporation)
- ▶ We have 2 KISA security certified products, too.

6 Registered Pat.(17 Pending) / 25 Registered Design and Trade marks

Patent Registration	Patent Applicant	Registration Number
Electricity Distribution Control System and the Methods of EV Chargers	Klinelex Co., Ltd.	KR/10-2032871
Electricity Distribution Control System and the Methods of EV Charging Systems with Sockets	Klinelex Co., Ltd.	KR/10-2032872
EV Charger Control System	Klinelex Co., Ltd. Korea Land & Housing Corporation	KR/10-1896572
Inverter Control System	Klinelex Co., Ltd.	KR/10-1236621
PLC Output Circuit	Klinelex Co., Ltd.	KR/10-1105578
Synchronized Control System of Slave Equipment Connected to the Network	Klinelex Co., Ltd.	KR/10-1044521

Major Clients and Selling



Supplied 1,700 Slow-Speed Chargers to KEPCO



Supplied 100 Units to Korea Land and Housing Corporation



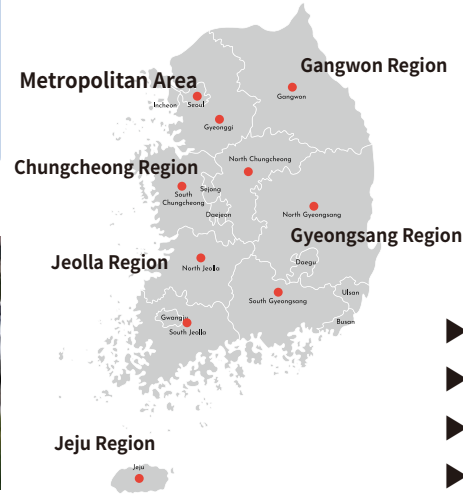
Supplied 8,400 Units to Businesses Taking Part in Public Charging for Korea Environment Corporation



Charging service for more than 2,000 Chargers



Service Regions and Network

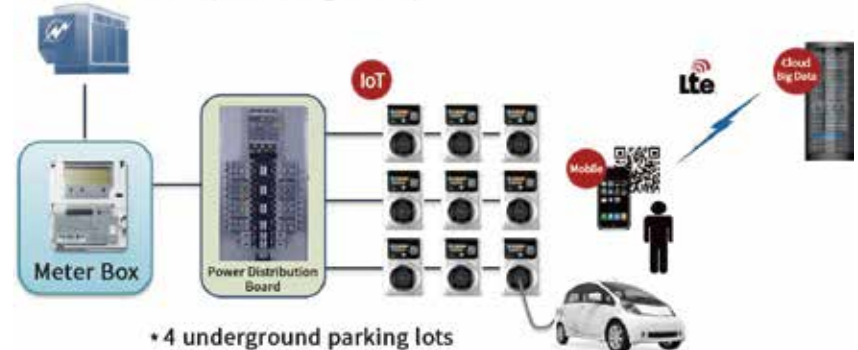


- ▶ Maintenance Staff for Each Regional Center
- ▶ Speedy Troubleshooting System
- ▶ The Best Customer Service
- ▶ Call Center Available 24/7

APT. Multi-charging System (Jeju Test Site)

Increase of EVs by five times due to ease of charging EVs without having to compete for parking space

Electrical Room (Low-Voltage Panel)



Slow Chargers (12,000 Sold)

KL10-SD2K 7kW



KL10-WD2K 7kW



KL60 C-type 7kW



KL60 B-type 7kW



Mini-Sized Charger

KL41 BC(LCD) 7kW



Public Charger
For KEPCO,
Public Sectors and
Private Corporations

Charger Type	Wall-Attached Type (Can Choose Standing Types of KL 10-SD2K)	
Model Name	KL10-WD2K(B Type & C Type)	
Input	220V/60Hz	
Output	220V/32A (7kW)	
Operating Conditions	Temperature	-20~40°C
	Humidity	20~93%
Operation Screen	LCD Touch Screen	
User Authentication	1. Cell Phone App Authentication	
	2. RF Card Authentication (Need to register RF card)	
Charge Time	4 hours or less (based on 28kWh battery)	
Protection Grade	IP44	
Size(W×D×H)	297x210x1400(mm), Wall-attachment length 650(mm)	
Weight	Wall-attachment Type (19kg), standing type (31kg)	
Certification	KC-Certification, Electromagnetic Wave Certification	
Connector	5 pin Connector (5m-long cable) + charging socket	
Characteristic	<ul style="list-style-type: none"> * Even new users are able to use the product at ease with voice guidance * Bright LCD with responsive touch panel * Provides information on charging state (shows charging electricity, electricity amount, and charging time) * Automatically detects charging connector B/C type * Low electricity consumption during waiting time * Applicable for all cars (provides B-type and C-type) 	

Charger Type	Wall-Attached Type (Can Choose Standing Types)	
Model Name	KL60 (C Type)	
Input	220V/60Hz	
Output	220V/32A (7kW)	
Operating Conditions	Temperature	-20~40°C
	Humidity	20~93%
Operation Screen	LED Display	
User Authentication	1. Cell Phone App Authentication	
	2. RFID Card	
Charge Time	4 hours or less (based on 28kWh battery)	
Protection Grade	IP44	
Size(W×D×H)	175×250×92(mm)	
Weight	3.6Kg	
Certification	KC-Certification, Electromagnetic Wave Certification	
Connector	J1772 5pin Cable	
Characteristic	<ul style="list-style-type: none"> * Shows the connection state of the charging cable * Provides information on charging state (shows charging electricity, electricity amount, and charging time) * Low electricity consumption during waiting time 	

Charger Type	Wall Attachment Type (Can Choose Standing Type)	
Model Name	KL41-RBC (B-type & C-type)	
Input	220V/60Hz	
Output	220V/32A (7kW)	
Operating Conditions	Temperature	-20~40°C
	Humidity	20~93%
Operation Screen	LCD LCD Touch Screen	
User Authentication	1. Cell Phone App Authentication	
	2. RF Card Authentication (Need to register RF card)	
Charge Time	4 hours or less (based on 28kWh battery)	
Protection Grade	IP44	
Size(W×D×H)	300×365×174(mm)	
Weight	9Kg	
Certification	KC-Certification, Electromagnetic Wave Certification	
Connector	5 pin Connector (5m-long cable) + charging socket	
Characteristic	<ul style="list-style-type: none"> * Bright and vivid LCD screen * Automatically detects recharging connector B/C type connection * Provides information on charging state (shows charging electricity, electricity amount, and charging time) * Low electricity consumption during waiting time * Recharges all cars (provides B type & C type) 	

◆ Socket Outlet : 220V socket / 5-Pin(basic) / 7-Pin ◆ Cable Length : 5m(basic) / 7m / 10m

KL41IC-BC(IC CARD) 7kW



KL4214-BCC-IC (IC CARD) 14kW



KL4214-BCC 14kW



KL40-BC 7kW



IC Card Payment Charger

Two 7kW Charging Cables (14kW)

Wall Attachment Type (Can Choose Standing Type)
KL41C-BC (B-type & C-type)
220V/60Hz
220V/32A (7kW)
-20~40°C
20~93%
LCD Touch Screen
1. Cell Phone App Authentication
2. IC Card + RF Card Authentication
4 hours or less (based on 28kWh battery)
IP44
300×365×174(mm)
9Kg
KC-Certification, Electromagnetic Wave Certification
5 pin Connector (5m-long cable) + charging socket
* Bright and vivid LCD screen
* Automatically detects recharging connector B/C type connection
* Provides information on charging state (shows charging electricity, electricity amount, and charging time)
* Low electricity consumption during waiting time
* Recharges all cars (provides B type & C type, provides C type)

Wall Attachment Type (Can Choose Standing Type)
KL 4214-BCC-IC (B-type & C+ C type) 14kW
220V/60Hz 14kW
32A (7kW) / 32A (7kW)
-20~40°C
20~93%
LCD Display (2 separated screens)
1. Cell Phone App Authentication
2. IC Card + RF Card Authentication
4 hours or less (based on 28kWh battery)
IP44
300×365×174(mm)
11Kg
KC-Certification, Electromagnetic Wave Certification
Two 5 pin Connector (5m-long cable) + charging socket
* IC Card
* Charges two 7kwh EVs at the same time
* Provides information on charging state on two separate screens (shows charging electricity, electricity amount, and charging time)
* Automatically detects recharging connector B/C type connection
* Low electricity consumption during waiting time
* Recharges all cars (provides B type & C type, provides C type)

Wall Attachment Type (Can Choose Standing Type)
KL 4214-BCC-IC (B-type & C+ C type) 14kW
220V/60Hz 14kW
32A(7kW) + 32A(7kW)
-20~40°C
20~93%
LED Display (2 separated screens)
1. Cell Phone App Authentication
2. RF Card Certification (Needs to register RF card)
4 hours or less (based on 28kWh battery)
IP44
300×365×174(mm)
11Kg
KC-Certification, Electromagnetic Wave Certification
Two 5 pin Connector (5m-long cable) + charging socket
* Charges two 7kwh EVs at the same time
* Provides information on charging state on two separate screens (shows charging electricity, electricity amount, and charging time)
* Automatically detects recharging connector B/C type connection
* Low electricity consumption during waiting time
* Recharges all cars (provides B type & C type)

8,000 ea Supplied to
Korea Environment
Corporation

Fast Chargers (50kWh ~ 400kWh)

100kW Fast Charger + Canopy



50kW Fast Charger



Output Power : 50kW

DC Output : Maximum 500Vdc, 125Adc

Cooling Method : Cooling Fans

Display : Capacitive Touch Panel (8 inches)

Charging Time : 30 minutes (synchronized to battery size)

Product Size : 500(W) x 700(D) x 1,500(H)mm

Weight : 180kg

Connector : Combo 1ea

User Authentication : Synchronized RF card, password, charging system

Charger Type : DC Combo

Input : 3-Phase 4-Wire AC 380V ~ 480V

Power Factor : 0.99

Temperature : -20°C ~ 40°C

Humidity : 20~93%

Certification : KC, EMC

Characteristic :

1. Compatibility verification with all EVs of Combo Type 1
2. Even the elderly are able to use the product at use with the electromotive reel system
3. Self-Diagnosis function
4. Safety function (detecting abnormal temperatures and circuit state and blocking)



Patent Application

This patented equipment unreels the cable automatically by using electromotive motors and sensors, and when charging is complete, the cable is pulled in automatically to ensure that the cable does not touch the floor.

Fast Charger for the weaks
(Motor-puller system)



High Efficiency Certification : 95%



Convenient Handling of Cable

- ▶ When the cable is detached from the connector box from the charger, the cable is unreels automatically
- ▶ When the cable is returned to the connector box, the cable is returned to the original place automatically
- ▶ The user is able to control the length at ease
- ▶ Even the women and the elderly are able to use the product conveniently and safely
- ▶ The cable does not touch the floor that the cable is not dirtied and guarantees safe use
- ▶ The cable could be attached to chargers of other companies

Power-vending Outlet

KL60-IoT2, LH2

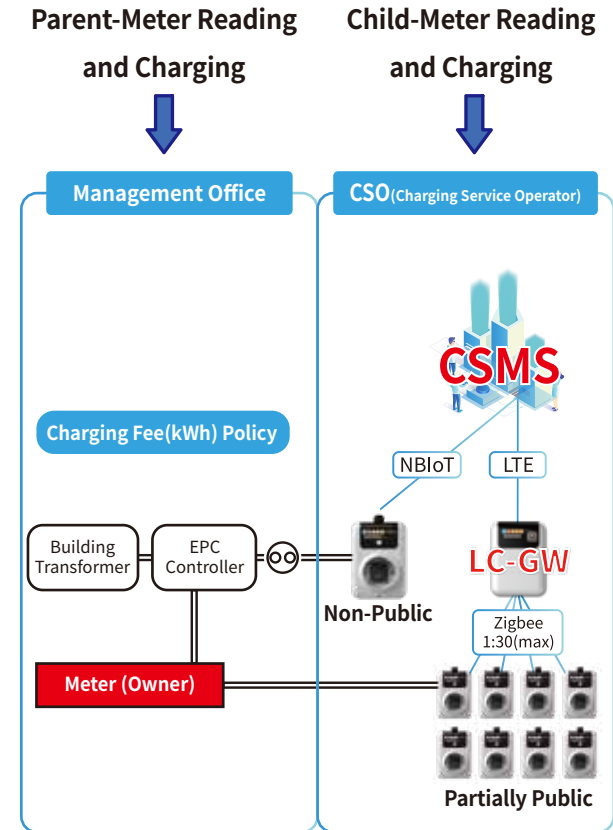


Category	Content
Output Capacity	3.5kW (16A)
Size	175(W) × 250(H) × 92(D) mm
LED Display	Charging state, remaining electricity
Payment Method	RF Card, Smartphone Application
Metering	Embedded Metering

Characteristics

- ▶ Non-public charger conveniently installed to apartment buildings
 - Managed service device including communication modem and RF reader
- ▶ Managed Services
 - The contractor separate the EV parent power meter and child meter and pays the basic fees and the usage fees
 - Klinelex verifies the monthly EV charging amount and sends the data to KEPCO
 - KEPCO deducts EV charging amount from the parent meter
- ▶ Authentication and Connection
 - Kcharger app, QR code and RF membership card authentication
 - Connects to the automobile inlet after authentication

DSO (Distribution Service Operator like KEPCO)



CSMS : Charging Station Management System
LC-GW : Local Controller Gateway

EV Chargers Line-up

Managed Multi-Charging Stand



- Cost, Space Down
- 5-Ch Local Control charging

Chargers and sockets are connected to a single stand, and electricity is controlled within 7kW

3.5kW, 7kW Slow Chargers and Others



BC type Public Charger and 1.5kg Super-Light Charger Sold by More than 10,000 Units

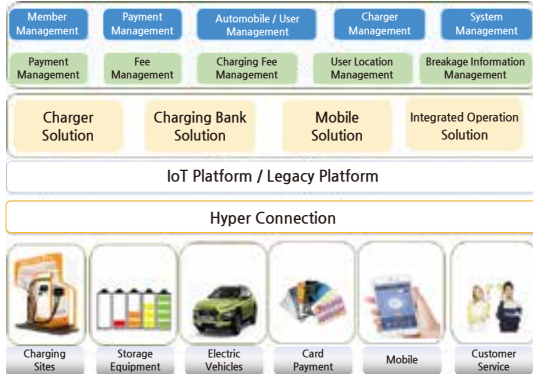
50~400kW High-Speed Charger



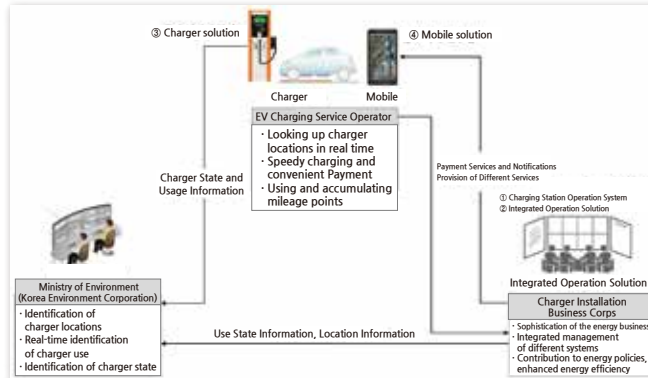
The electromotive reel cable system enables easy use with little effort

Charger Management and Billing Solutions

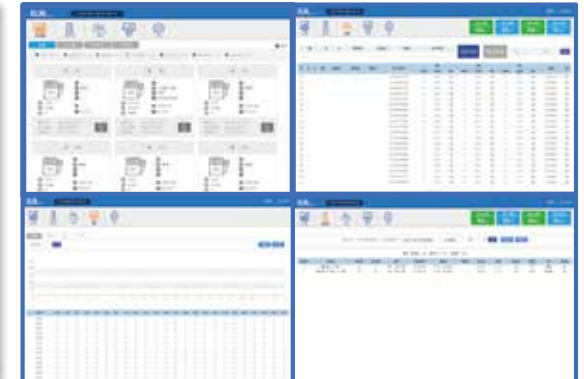
On-site Charging / Controlling System



Key Parts of Operational

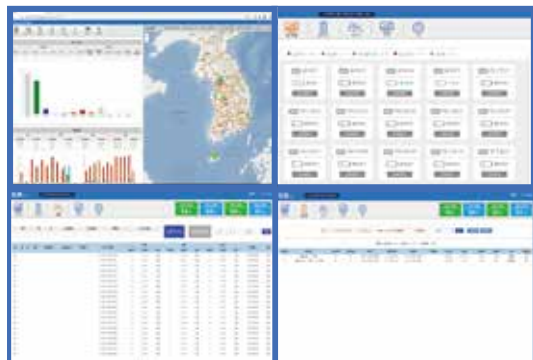


Operation Systems relationship diagram

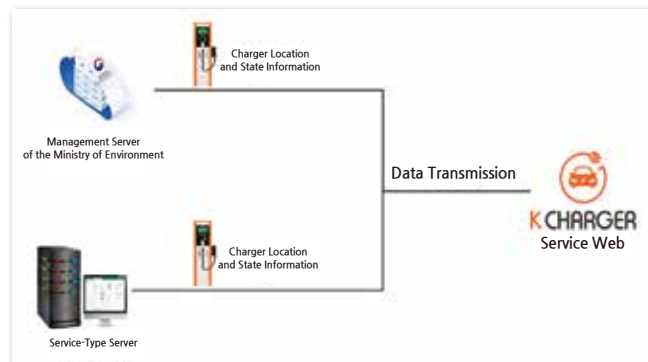


Control System's Main Screen

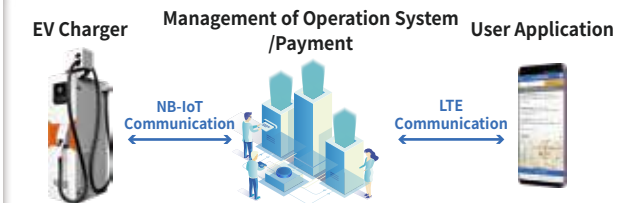
Service-Type Charging and Control System



Control System's Main Screen



Operation Systems relationship diagram



On-Site Payment

1. Member Payment: Card, Cell-Phone Payment, Mobile Cash
2. Non-Member Payment: Card, Cell-Phone Payment, QR Code

(Charging by Customers via Smartphone App)

On-line Shopping mall and Quotation system

Go to Klinelex Website (www.klinelex.com) > Online Shopping Mall > Sales of Chargers to Private Entities > Choose Product or Automatic Estimate > See Quotation and Pay

KLIN ELEX

회사소개

EV 충전기

쇼핑몰

비공용신청

고객센터

Login | Join | Lost ID



Shopping Mall

Self-Quotation



KL60-C형 7kW
7kW



KL60-B형 7kW
7kW



KL60-220V 3.3kW
3.3kW 과금형콘센트



KL60-C형 3.3kW
3.3kW



KL40-B7 벽부형
7kW



KL40-C7 벽부형
7kW



KL60-B형 3.3kW
3.3kW



KL11-WC 벽부형
7kW



KL41-IC카드(B/C형)
7kW



KL40-BC형 벽부형
7kW



KL10-WD2K(B/C형)
7kW



KL10-SD2K(B/C형)
7kW

For Building constructors,
Remodeling and Facilities constructors

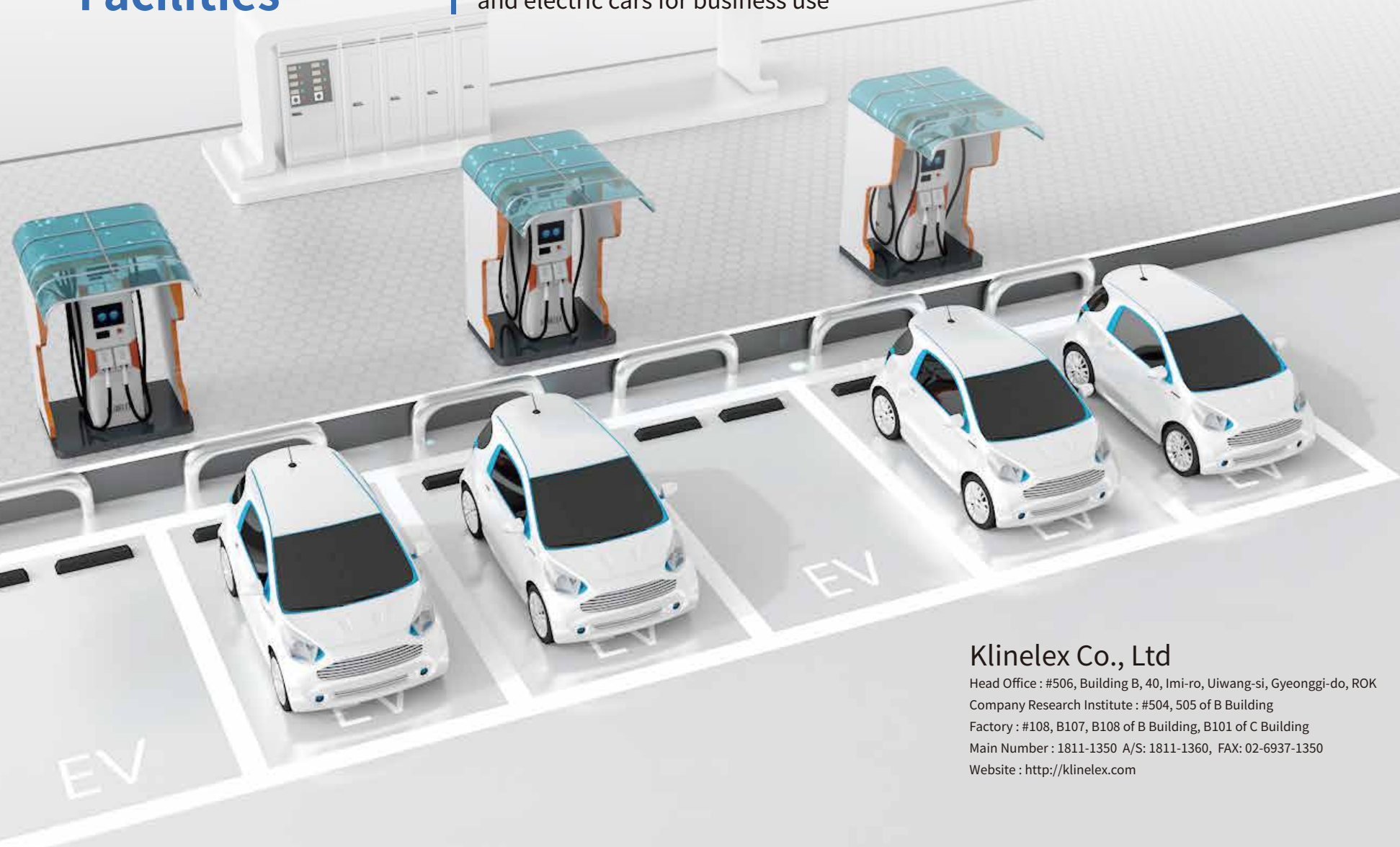


All-in-one Service from Construction,
Installation and Controlling

Visit <http://klinelex.com> for Inquiries

Fast Charging Facilities

Klinelex will build the most economic and convenient charging stations in any location for electric buses, electric trucks, electric taxis and electric cars for business use



Klinelex Co., Ltd

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Factory : #108, B107, B108 of B Building, B101 of C Building

Main Number : 1811-1350 A/S: 1811-1360, FAX: 02-6937-1350

Website : <http://klinelex.com>