Electric vehicle smart charging solutions

Innovate - Communicate - Optimise

ALFEN
POWER TO ADAPT

Innovate

As smart as any EV business model you can imagine

With advanced smart functionality built on common standards and open protocols, Alfen's charging solutions are, effectively, as smart as any reseller business model you can imagine. Uniquely flexible, they can be integrated with a range of back office management systems, and any smart energy technology or hub which shares our open technology principles. This flexibility enables our reseller partners to develop innovative and futureproof charging propositions, allowing them to:

- **Own and operate a charge point network**
- **Offer charging as a service**
- **Integrate charging into a demand response portfolio**
- **Offer combined home and business charging solutions**

CASE STUDY

Home-to-office charging solution for lease vehicles

Charge point operator, Allego, and global leader of car-as-a-service, LeasePlan, partnered in 2018 to provide LeasePlan electric vehicle customers with access to personal charge points both at home and work. The proposition allows for charging of any electric vehicle and offers automatic reimbursement of home energy for business use. LeasePlan drivers also receive a charge card giving them access to more than 65,000 charge points across Europe to reduce range anxiety. Alfen is supplying all of the charging equipment and services to Allego as part of the initiative which is being rolled out initially in Belgium, France, Germany, Luxembourg, the Netherlands, Norway, Portugal and Sweden.

Communicate

Profiles, pricing hierarchies, usage data & diagnostics

Communication is not just essential for business, it is the key to informing and educating energy users to help deliver a sustainable future. With a unique logo upload facility on the screen models, our chargers can communicate your brand, as well as tariff and charging status information to users. They are also designed to offer back-end data. As founder members of the de facto industry standard 'Open Charge Point Protocol (OCPP)', our products have been smart from the start, allowing reseller partners to develop all the profiles, pricing hierarchies and energy and usage data they could ever want. We continue to develop alongside, and on top of, the protocol and release regular firmware updates. Our data security is also certified.

- **OCPP-compliant with added unique functionality**
- **Personalised logo and tariff information on display**
- **SIM unlocked modem**
- **Preset backend settings**
- **Bimonthly firmware updates**
- **IEC 27001 data security certification**

Management system flexibility

All of Alfen's charge points can be integrated with any OCPP-compliant back office for asset management and transaction services. Our products also allow for switching from one system to the other, via a simple SIM card replacement, to accommodate future market changes. We also have our own proprietary back office management system, Alfen Connect, which provides access to usage data and allows remote monitoring, configuration and maintenance of charge points and charge point networks.

Optimise

Promoting energy efficiency and grid optimisation

Any smart charging solution must, ultimately, be part of a larger ecosystem, where integration and inter-operability are essential for energy and grid optimisation. Our products have been specifically designed for this purpose. As well as being able to communicate and respond to wider energy solution technologies, they offer static and dynamic load balancing at both individual charge point and multiple networked charge point level. This allows for optimal charging of vehicles within the confines of the grid connection. In addition, Alfen's Smart Charging Network allows for the integration of up to 100 single, or 50 dual socket, charge points on a single site. These all communicate with each other in a non-hierarchical mesh network, to ensure optimal distribution of load at all times and to remove the reliance on a single 'master' unit to function correctly. This unrivalled level of load balancing functionality makes Alfen a natural choice to help optimise:

- **Smart energy and grid projects**
- **Smart homes**
- **Single site smart charging networks**
- **Public infrastructure projects**

CASE STUDY

Integrated charging hub and storage solution at grid operators' EV test site

ElaadNL is a partnership of grid operators working together to understand electric vehicle infrastructure and its future impact on the grid. In 2018, it opened an electric vehicle charging test site in Arnhem, the Netherlands. The facility allows car manufacturers and grid operators to test different combinations of vehicle and charging solutions to better understand smart charging options in relation to grid power quality. As well as providing and grid connecting a substation at the site, Alfen also provided its electric vehicle charge points, arranged in a charging plaza, with dynamic load balancing. It also integrated its battery storage solution to optimise charging within the grid capacity and provide additional energy for specific test scenarios when required.

Alfen
Power to adapt

Founded in 1937, Alfen manufactures and integrates innovative smart energy solutions to help accelerate the transition to a sustainable energy future. Our electric vehicle charging stations, energy storage solutions and transformer substations are all designed for integration and interoperability and offer the highest level of data security. Constructed in-house from A-grade European components, they are chosen by utilities, grid operators and energy companies for their reliability and flexibility to help innovate, inform and optimise projects.

Whether you are using Alfen to deliver a smart energy project, supply and connect a substation, integrate a battery or charge your car, you can be confident that you have one of the highest quality solutions available and that it was designed with the future in mind.

Electric vehicle charging solutions

Alfen has been developing smart electric vehicle charge points since 2008. Our range of 3.7-22kW charges offers something for every situation and these are all designed to deliver maximum charging speeds, while safeguarding the local grid connection. They can be integrated with any OCPP management system, renewables, smart energy and smart home solutions and are also capable or responding to time-of-use energy tariffs.




	Eve Single S-line	Eve Single Pro-line	Eve Double Pro-line	Twin
	Compact and affordable single socket for home use	**Compact single socket for home and business**	**Dual socket in a rugged case, for higher volume environments**	**Dual socket in a steel pillar to withstand an on-street environment**
Charging speed	Single and triple phase, 3.7-11kW	Single and triple phase, 3.7-22kW	Single and triple phase, 3.7-22kW	Triple phase, 11-22kW
Size	370 x 240 x 130 mm	370 x 240 x 130 mm	590 x 338 x 230 mm	1385 x 335 x 220 mm
Tethered version available	Yes. 5 or 7,5M cable	Yes. 5 or 7,5M cable	No	No
User interface	LED charging status light	3.5" Full colour screen with logo upload facility	7" Full colour screen with logo upload facility	Icon-based instructions and LED charging status lights
Connectivity	Ethernet (optional: GPRS, LTE)	GPRS (2G), LTE (4G), Ethernet	GPRS (2G), LTE (4G), Ethernet	GPRS (2G), LTE (4G), Ethernet
Authorisation	Plug & charge (optional: RFID)	RFID and Plug & charge	RFID and Plug & charge	RFID and Plug & charge
MID-approved meter for billing	Yes	Yes	Yes	Yes
Single site SCN* with load balancing	Connect up to 100 single sockets	Connect up to 100 single sockets	Connect up to 50 double sockets	Connect up to 50 double sockets
Active load balancing	DSMR.4.x / (e-)SMR5.0 - P1 (NL & BE). Modbus TCP/IP	DSMR.4.x / (e-)SMR5.0 - P1 (NL & BE). Modbus TCP/IP	DSMR.4.x / (e-)SMR5.0 - P1 (NL & BE). Modbus TCP/IP	DSMR.4.x / (e-)SMR5.0 - P1 (NL & BE). Modbus TCP/IP
Integrated DC fault detection	Yes	Yes	No	Yes
Integrated RCDs	No	No	Yes, Type B	Yes, Type A

*Smart Charging Network