FUELFORCE® EV

Integrated Management of EV Charging Systems

EV Charging for MultiFamily Housing

FuelForce® Advantages:

- Durable and Reliable Hardware
- Secure Authorization and Reporting
- Wireless Data & Reporting Access

Brought to you by

MSC MULTIFORCE SYSTEMS CORP

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Common EV Charging Problems for Apartments and Condos/Townhomes

Property managers and HOAs face the same difficult challenges when it comes to accurately tracking EV charging and the associated costs:

Deciding on the Level of Charging to Provide

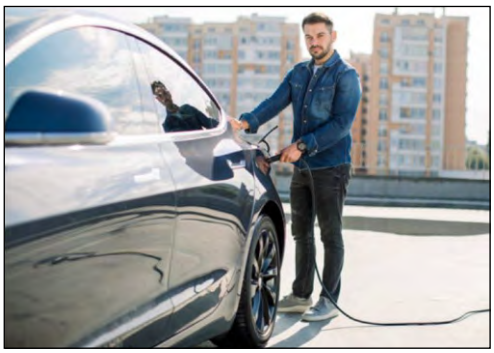
Property managers providing electric vehicle charging have three basic choices when it comes to the level of power to provide. Each level of charging requires a different amount of power and the supporting infrastructure, from panels to transformers. This can lead to costly mistakes when selecting a level of charging for your property.

Determining Actual EV Charging Costs

Most property managers know the total costs they face for their facilities. EV charging costs, however, end up buried in a property's utility bill. Power prices vary daily, with peak, partial-peak, and off-peak tiers, and seasonal differences. Additionally, utilities assess demand charges for peak usage, presenting a whole new cost capturing challenge.

Authorizing EV Charging for Tenants/Owners

A 20 gallon gas tank takes about 3-5 minutes to fill at the gas pump. A basic Level 2 vehicle can take from 4-6 hours to charge. Property Managers and EV owners need the ability to monitor the charging status, get a notice to move fully-charged vehicles, and could benefit by the ability to reserve stations for the next "round" of charging.



Transforming EV Power Management with FuelForce/EV

Your EV charging challenges are important. Trust our industry experts to help. With FuelForce authorization and reporting solutions, you can solve these problems as well as have additional capabilities, such as web-based administration. Transform your power management with FuelForce/EV, the Premier Force in Power and Fuel Management!

Electric Vehicle Market Growth

Electric Vehicle adoption is experiencing extremely rapid growth. Electric cars had their biggest year ever in 2019, even as storm clouds gathered over their future. The numbers were huge. Automakers committed $225 billion to electrification in the coming years. Ford showed off the upcoming electric Mustang Mach-E (a crossover SUV) and an electric F-150 pick-up. Tesla, an EV pioneer, turned a profit for the first time in 2019. At current growth rates, there will be more than 30 million electric vehicles (EVs) on U.S. roads within a decade, and that was projected before California, New Jersey, and Massachusetts called to ban gas car sales by 2035.

The U.S. Department of Energy (DOE) reports that more than 80% of EV charging is done at home. The result is that apartments as well as condo/townhome facilities will need to provide EV owners an option for charging their vehicles at home. As more and more drivers adopt EVs, the ability to charge these vehicles at their apartment or condominium will become increasingly important.

There are numerous benefits to installing EV charging at your property locations. Providing charging can attract new tenants as well as improve current tenant retention, increase your property value, and contribute to sustainability goals and count towards LEED (Leadership in Energy and Environmental Design) certification.

Types of EV Charging

Electric vehicle charging is available at three levels, based on the rate at which a vehicle can accept an electric charge. The higher the level, the faster the charging rate. However, the highest rate comes at a much higher cost both in equipment as well as the needed infrastructure.

Level 1

Level 1 charging uses a standard 110-volt AC circuit available in all residential locations. This is simply a standard AC outlet in the US.

Level 2

Level 2 charging uses 240 volt circuit (like a dryer circuit in your home). Most Level 2 chargers are directly wired, so installation costs are higher than Level 1.

DC Fast Charging

Direct current fast charging (DCFC) is the fastest option, using a commercial-grade 208, 440 or 480 volt circuit that is converted into direct current. Because of its high power demands, DC Fast Charging often requires an upgrade to a site's electrical service.

EV Charging Options

EV Charger Type

	Level 1	Level 2	Level 3
Time to add 20 miles of charge	91 Minutes	15 Minutes	1 Minute
Range added per 10 minutes of charge	2.5 Miles	13.5 Miles	213 Miles
Relative Cost	$$	$$$	$$$$$

Determining EV Charging Costs with the 814-EV

The FuelForce 814-EV Advanced Power Controller allows apartment owner and condo HOAs to provide EV charging, with the tenant/owner being able to self-identify and be authorized for the dispensing of electricity to their electric vehicle. As the power is dispensed, each transaction is logged and the system collects accurate and valuable power usage data. Tenants or condo/townhome owners can get the needed access to EV charging and property management can be assured the electricity used is tied to that tenant or owner and can bill back accordingly for the power.

Identification can be done by a keypad, proximity card or key fob, or an RFID-based automated identification approach. This ensures that the electricity use is associated with that tenant/owner. Additionally, a card-reader can be added for the acceptance of standard credit/debit cards. This capability allows for guests to charge their EVs, but does require additional financial system setup and fees.

Key Capabilities of the FuelForce® 814-EV

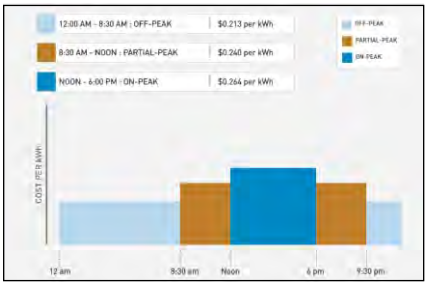
Authorization

By securing the charging locations, charging power is kept safe from theft. Authorization can be based on the vehicle or tenant/owner, these factors easily managed from our industry-leading cloud-based reporting platform, FuelServe.net. With accurate authorization, you control all aspects of security including access to the fueling sites, access to the island terminal, access to sensitive data, and authorization for dispensing fuel. FuelForce's physical design and flexible user/account-based protection provide for extremely secure fueling.

Sophisticated Power Usage Reporting

The FuelForce/EV platform is managed by FuelServe.net, which provides a detailed and customizable reporting platform. Securely available on any platform with a standard browser, property managers and HOA admins can access reporting by site or by tenant/owner from a desktop, laptop, tablet, or smartphone. With the FuelForce system, EV charging costs can be accurately allocated to the appropriate tenant/owner based on your varying utility rates.

Peak Period Lockout



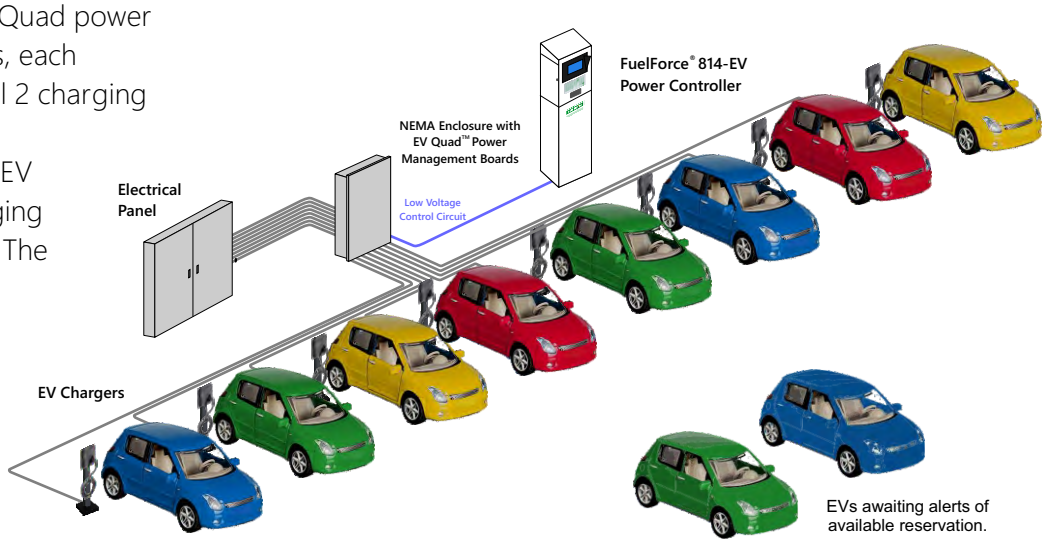
The FuelForce/EV platform allows property managers to put a hold on charging during peak billing times. Transactions are put on hold and then restarted at the end of the lockout period, with all power use reported in a single transaction record. Peak Period Lockout can help reduce the impact of EV charging on the total electricity costs. Effective use of the Peak Period Lockout feature can also help avoid additional costs due to utility demand charges.

Configuration Options

The 814-EV provides a control point for electric vehicle charging, eliminating unauthorized charging by validating each transaction and tying that data back to the tenant/owner. The 814-EV sits between a standard electrical panel and the EV chargers, and controls and measures the power used to charge the vehicles. You will need to work with a licensed electrician as you may need to upgrade your electrical panel. If you ar e adding a large number, you should also work with your local utility as you may also need a transformer upgrade. Pr e-planning efforts like these will save you both money and headaches.

FuelForce® 814-EV Configuration

The 814-EV includes our EV Quad power management control boards, each capable of managing 4 Level 2 charging circuits (40 amps each). The 814-EV can support up to 4 EV Quads for a total of 16 charging circuits under management. The EV Quads are housed in a separate NEMA enclosure and are controlled by the 814-EV. They provide the management of the attached charging circuits.

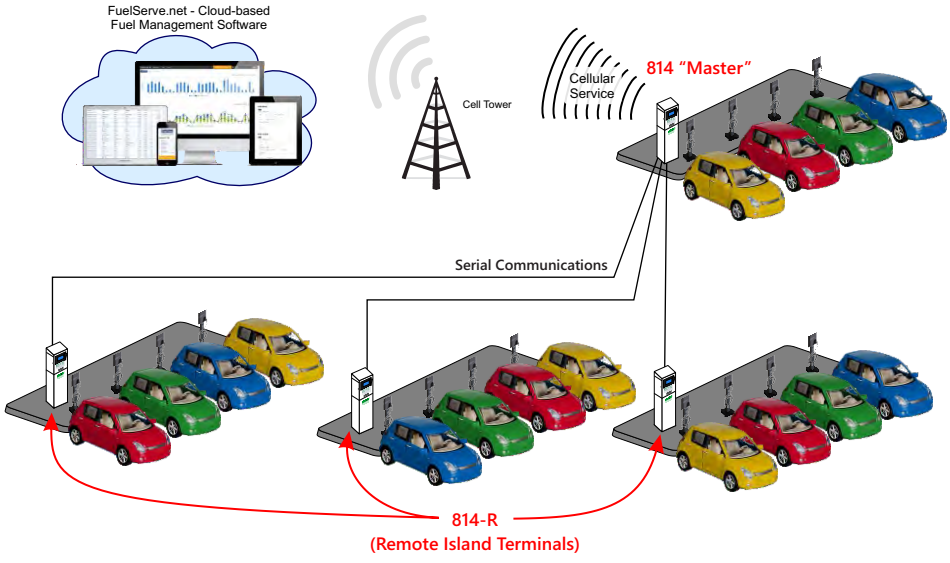


814-EVR – Remote Island Terminal Option

The 814-EVR Remote Island Terminal (RIT) is a cost-saving option for sites with multiple charging areas at the same site. Each "master" 814-EV controller can connect up to 3 RITs, allowing the management of up to 64 chargers. The master controller keeps the transaction logs and communicates with the cloud-based management software through a single cell connection, instead of having cell modems in each charger (see diagram below).

The "master" provides the authorization information to the RIT and captures all of the charging transaction detail from its own as well as each connected RIT.

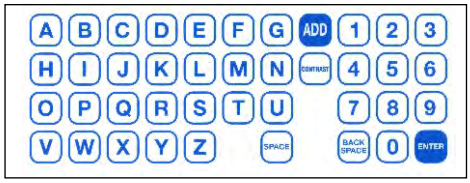
The 814-EVR is provided at a price point that can significantly reduce overall system costs. Sites with a Remote Island configuration have access to the same identification, authorization, logging, and reporting as any other FuelForce® installation.



Multiple Identification & Input Options

Keypad

Available on all 814 configurations, a full Alphanumeric Keypad can be used to input a driver ID. This could be a code tied to a tenant or condominium owner.



Proximity Keys & Cards

With the Proximity Card Reader option, drivers can be identified and authorized with a proximity key or card. This could be the same card as used to open a gate or parking garage entry.

Credit Cards

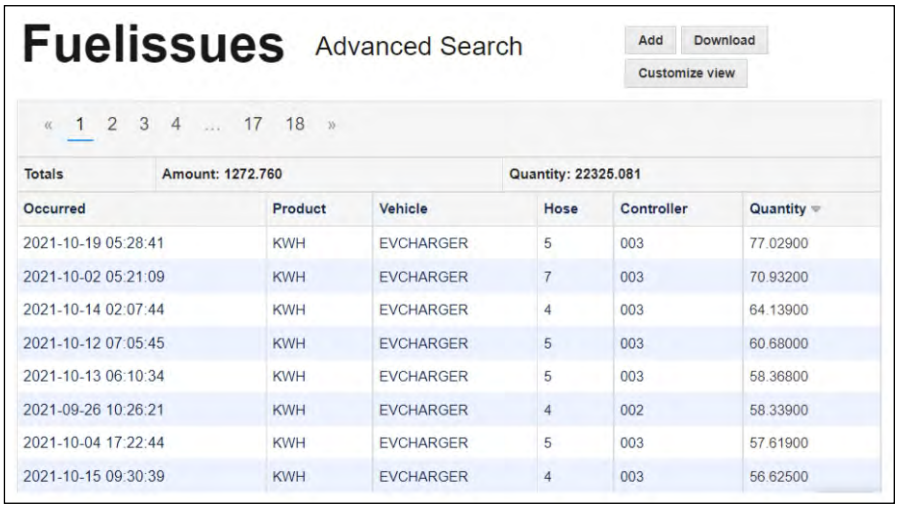
With the Mag Stripe Reader option, drivers can use standard credit cards. As a result, visitors can pay directly for electricity for their vehicle charging. A receipt printer can be added to the Controller.

Reporting and Charge Back of EV Charging

FuelServe.net Cloud-Based Fuel Management

Outsource your fuel management administration with FuelServe.net, a secure web-based solution. First released over 10 years ago, FuelServe.net is a premier web-based power management platform. View and manage your data from any device with a standard web browser and download your fuel reports *anytime, from anywhere*.

Additionally, FuelServe.net can provide a customizable report showing electricity use by tenant. The reporting can be done for property management and ownership to see total electricity used for all EV charging as well as by each individual tenant/condo owner. This report can included a fee-based concept for billing back to tenants or condominium owners on a monthly or some other customized basis.



Totals	Amount: 1272.760			Quantity: 22325.081	
Occurred	Product	Vehicle	Hose	Controller	Quantity
2021-10-19 05:28:41	KWH	EVCHARGER	5	003	77.02900
2021-10-02 05:21:09	KWH	EVCHARGER	7	003	70.93200
2021-10-14 02:07:44	KWH	EVCHARGER	4	003	64.13900
2021-10-12 07:05:45	KWH	EVCHARGER	5	003	60.68000
2021-10-13 06:10:34	KWH	EVCHARGER	5	003	58.36800
2021-09-26 10:26:21	KWH	EVCHARGER	4	002	58.33900
2021-10-04 17:22:44	KWH	EVCHARGER	5	003	57.61900
2021-10-15 09:30:39	KWH	EVCHARGER	4	003	56.62500

FuelServe.net allows users to look at their data with the functionality of running daily, weekly, monthly, and yearly reports as well as custom timeframes.
The platform has the following features, among others:

- A database that can be tailored to include client requested information.
- Custom reports that can be modified by all relevant fields, and set up for automatic report generation.
- 50,000 vehicle & driver capacity.

Driver Alerts and Reservations

Charging Status Alerts

The 814-EV includes the ability to notify drivers with system alerts. A driver can enter their mobile phone number at the time of authorization to receive charging status messages. The 814-EV can alert the EV driver when the process starts, ends, or is interrupted prior to completion.

Text Sample

12-Sep-17 12:19:33- FuelForceEV charging started: Your EV is drawing 24 Amps from charging station 2.

Charger Reservations

When all the charging stations in the lot are in use, the unique FuelForce/EV reservation feature can alert a driver when a specific charging station is available. The driver can return to initiate their own EV charging session. Property managers can additionally allow the EV driver to reserve more than one charging station at a time,

Text Sample

16-Nov-17 17:31:34- FuelForceEV charging station 1 is now available! Your reservation will expire in 5 minutes.

Controller Specifications

- Functional at -20° to 140°F and 95% humidity
- Weather & corrosion resistant housing
- Solid state data storage
- Glare free hood design
- Full alphanumeric flat faced keypad
- Large 16 line, 48 character LCD backlit screen
- Remote diagnostics and system updates
- Powerful surge protection included
- Underwriters Laboratories approved
- 110V AC, +5V DC

"Call support is great. Call back from customer service is timely and they always answer my questions. The ability to create specialty reports is a great feature."

—Brian Barwick
Controller at
Jess Howard Electric Co.

World-Class Customer Support

When you purchase a FuelForce system, you are not only purchasing the premier power management system available, you also have the support of a professional staff that is able to answer every question you may have.

To Contact Multiforce Customer Support:

Email: **customersupport@fuelforce.com**
Phone: **(800) 257-9512**
Hours: **Monday - Friday**
8:00 am to 8:00 pm EST

24 / 7 Support Plans Available

c UL US LISTED

To learn more or to setup a demo contact us:
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