The EV Master Controller from Cyber Switching
A New Approach for Charging More EVs for Less
**Taming the EV Charging Tiger!**

Fleet owners and facility managers across the United States and worldwide are facing the same challenge: how to cost effectively meet the ever increasing demand to charge Electric Vehicles (EVs). EV demand is skyrocketing and more and more there is a need to charge them at home, at work, and at play.

Unfortunately, full system installations of charging stations can be very expensive. Adding multiple charging stations in a parking structure is not just a decision of space allocation. Nor is it just a simple decision of which charging station to purchase. Often, the greatest portion of the total system installation cost is delivering power to the EV parking spaces.

Whether you are a fleet manager needing to deploy and keep charged dozens of Electric Vehicles, a corporate or municipal facility manager needing to provide charging to dozens or more EVs, or a multi-family property manager or owner needing to comply by providing EV charging stations for your tenants, the challenges of cost-effectively providing power to Electric Vehicles can be daunting, and the costs to install and provide that power can be prohibitive. Finally there is a solution that can optimize the power needed to efficiently charge multiple electric vehicles while reducing the costs to do so.

**Introducing the EV Master Controller**

Cyber Switching Solutions is introducing a new solution called the EV Master Controller (EVMC). The EVMC brings substantial savings to the installation costs of these needed charging stations as well as to the monthly utility bill. Designed to work with myriads of charging stations, the EVMC adds efficient power management and allows for cost-effective deployment of EV charging stations in all sorts of environments.
**Without the EVMC**

Current charging solutions require dedicated power to each charging station serving the multiple vehicles. This requires that those dedicated lines be installed from an electrical panel all the way out to the parking area.

Facility managers working with their electrical contractors must plan for the total electricity needed to handle the demand. As the morning arrivals hook-up their electric vehicles, a spike in electricity is produced. Utility companies measure and bill upon total peak demand and this adds up to thousands of extra dollars in usage costs.

**With the EVMC**

Cyber’s patented method switches power to multiple charging stations in a “round-robin” scenario so that a single electrical line can feed multiple charging stations, with power incrementally rotating on a timed as well as a charging status basis to each attached vehicle. A minimum of 1/4th of the dedicated lines are required and because of the rotational charging, the peak demand caused by EV charging can also be reduced by up to 75%.

The result: The EVMC provides a more efficient use of the power required to charge multiple electric vehicles resulting in reduced overall electrical usage and as much as a 50% cost savings at installation.
The EVMC at Work

The EVMC is ideal for office parking, be it for large corporate campuses or for average businesses. In these environments, the EVMC brings a number of benefits:

1. More employees and guests can plug-in and get charged. By decreasing the overall costs of providing EV charging to multiple vehicles, facility managers and owners can provide charging to a much larger audience without “breaking the bank”.

2. More charging means reduced ”range anxiety” stress for employees and can be an important perk, as EV owners are assured a charge for their vehicles.

3. Employees moving their vehicles to and from charging stations can cost a company approximately $15,000 a year per employee in lost productivity. This is based on an average of pay factors and average times away from the office moving the car.

4. Currently, there are a number of government incentives in the form of rebates, tax credits, and other initiatives for those installing EV charging systems. Cyber’s EVMC puts more of those incentives within reach.

Key Features

One circuit for multiple locations:
- Power monitored at each location
- Set charge time for each location
- Shuts power off when premium charges begin

Rotational charging:
- Power rotated, continuously searching for a vehicle to charge
- Once charged, a vehicle falls out of the rotation.

Infrastructure costs reduced:
- Less need for individual circuits
- Less pipe or conduit
- Less wire or conductors
- Fewer circuit breakers
- Construction material and labor costs dramatically reduced
- Electricity demand charges reduced

Environmental benefits:
- Less greenhouse gases produced
The EVMC in Action

The EVMC offers not only an innovative power management approach for expanding EV charging, but at its core it brings both manageability and scalability.

Manageability

Designed with the purpose of intelligently switching power, the EVMC dashboard communicates with a controller to both monitor and control the EV charging switching environment. The dashboard also provides the ability to configure each EVMC in the system, including elements such as charge times per station and station charging priority. It also has the ability to remotely shutdown a specific station if desired. All of this manageability is available at any time securely from anywhere in the world.

Scalability

The EVMC System is extremely scalable. The dashboard is able to manage thousands of individual EV Master Controllers from a single interface. This scalability gives facility and fleet managers the confidence to expand the charging capability and still keep it all easy to configure and control.
A Word to Fleet Owners

Fleet ownership carries tremendous responsibility. From the investment in Zero Emission Vehicles (ZEV) to the expense of Electric Vehicle Supply Equipment (EVSE), many critical choices need to be made. With the desire to adopt electric vehicles into fleets; corporations, municipalities and government agencies are experiencing the global push to increase their EV fleet numbers and slash emissions in a meaningful way. Across the board, policy-makers are collaborating to develop and expand EV infrastructure to promote EV use and build the nations’ electrified roadmap.

Fortunately, infrastructure design and implementation costs can be offset in most cases by Federal and State incentives, rebates, and grants. A large Commercial Federal Tax Credit is offered to businesses that purchase and install Electric Vehicle Charging Stations. A tax credit for 30% of qualifying costs, up to $30,000, may be applied to each individual charging site.

Across the country, most states are encouraging builders, developers and other business customers to include EV Charging Infrastructure in their projects by offering a range of rebate programs. In California, for example, the Bay Area Quality Management District (BAAQMD) Charge! Program reimburses up to $3000 per Level 2 charger, and up to $25,000 per DC Fast charger. Applicants may apply for up to $600,000 depending on number and size of stations requested.

With Cyber Switching Solutions’ revolutionary technology, the move to an all-electric fleet just got easier! Fleet owners can seamlessly add the EVMC into their existing charging stations, or plan to incorporate the EVMC into their new infrastructure at the design stage.

What does this mean? Quite simply, where one EV sat at a single charging station supplied by one dedicated circuit, fleet owners could see four EVs served by that same dedicated circuit.

Can you say speedy Return on Investment? We thought so!
**Product Specifications**

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<thead>
<tr>
<th>FEATURE</th>
<th>TECHNICAL SPECIFICATION</th>
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<tbody>
<tr>
<td>UL File</td>
<td>PAZX.E206903</td>
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<tr>
<td>Certifications</td>
<td>UL916, Energy Management Equipment, CAN/CSA 22.2 No. 205-12, Standard for Signal Equipment</td>
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<tr>
<td>Output Ratings</td>
<td>277Vac, 30A; 250Vac 2hp, motor load; 40A/240Vac</td>
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<tr>
<td># of Stations</td>
<td>4 - 7.7kw to 9.6kw Level 2; 8 - 3.8kw Level 2</td>
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**EVMC AUTOMATICALLY ROTATES CHARGING**

Rotation Timing:
- With Load, Factory Default: 30 min per station (programmable) - less with full or partial load
- No Load: 30 second cycle per station

**EVMC Control Unit Detail:**
- Input from Electrical box (only one input shown)
- Ethernet connection (RJ45 Cat5e)
- EVMC supplied premounted on back panel ready for installation (additional wiring and components not shown)
- Electrical box (sold separately)

**Ordering Information**

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<thead>
<tr>
<th>PRODUCT #</th>
<th>PRODUCT DESCRIPTION</th>
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<tr>
<td>CS-EVMC-7700-4</td>
<td>Electric Vehicle Master Controller</td>
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Learn more at www.cyberswitching.com or call us at 888.311.6277

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