TRIATHLON®

INTELLIGENT BATTERIES

Energy. Endurance. Power.

MD LOADmanagement

more intelligent solutions

More and more lithium-ion batteries are used in modern vehicle fleets. One of the great benefits of this technology is the fast charging capability at any available opportunity. A battery system can be fully charged within an hour.

The TriCOM® ion series of high-performance chargers are used for fast charging lithium-ion batteries. Although these chargers have one of the highest charging efficiencies (up to 97%), when multiple batteries are put on charge at the same time, for example during breaks or shift changes, a very high power demand is required.

This circumstance leads to a high peak demand load on the mains. Power companies then increase the electricity cost based on high demand during those times of the day.

We can offer you a solution for such situations!

MD LOADmanagement considerably reduces high peak demand through intelligent load management.

The battery first transmits the current state of charge to the charger. This information is transferred to a master computer, the MD LOAD Control Center.

Based on a battery's state of charge, the individual charger outputs are then controlled via an intelligent algorithm that optimizes the available power without going over the determined peak power demand limit.

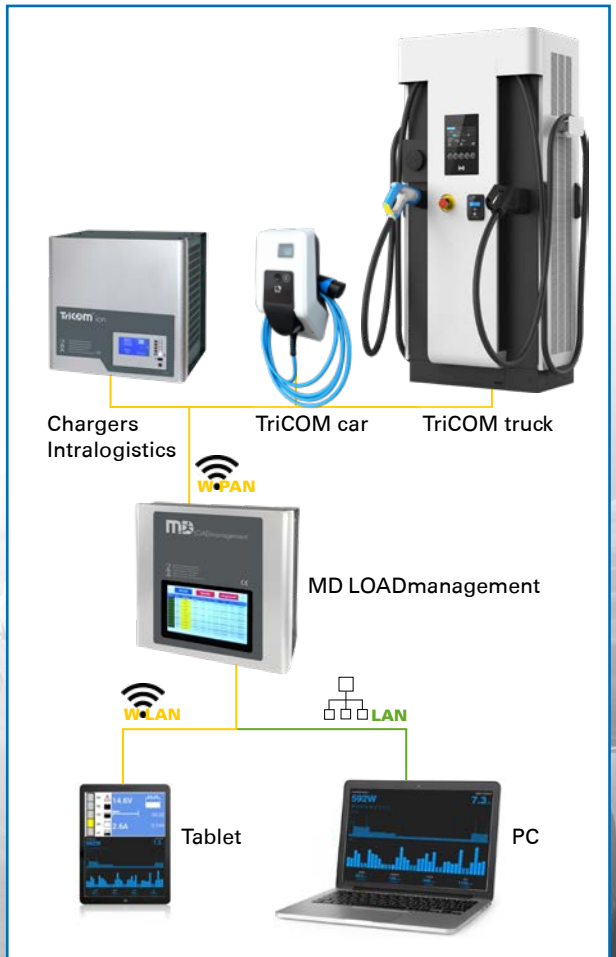
The ability to variably adjust the output across a fleet of chargers without going over a predetermined power limit leads to significant cost savings in the price charged from power company. .

MD LOADmanagement reliably ensures optimum availability of the vehicle fleet while at the same time significantly reduces available mains connection power requirements.

The technology of tomorrow, today -

SYSTEM FEATURES

- Intelligent energy management
  Significant reduction of peak power demand
- Maximum usage
  Highest availability of the vehicle fleet
- Significant cost savings
  Less expensive power
- Flexible control of power limit values
  Based on a set calendar/time function or an input signal from the electric distribution system
- Connection of car and truck charging points



safe and economical

Requirements

Hardware:

TRIATHLON® Lithium-Ion batteries together with TriCOM® ion series chargers and the MD LOAD Control Center enable the use of load management.

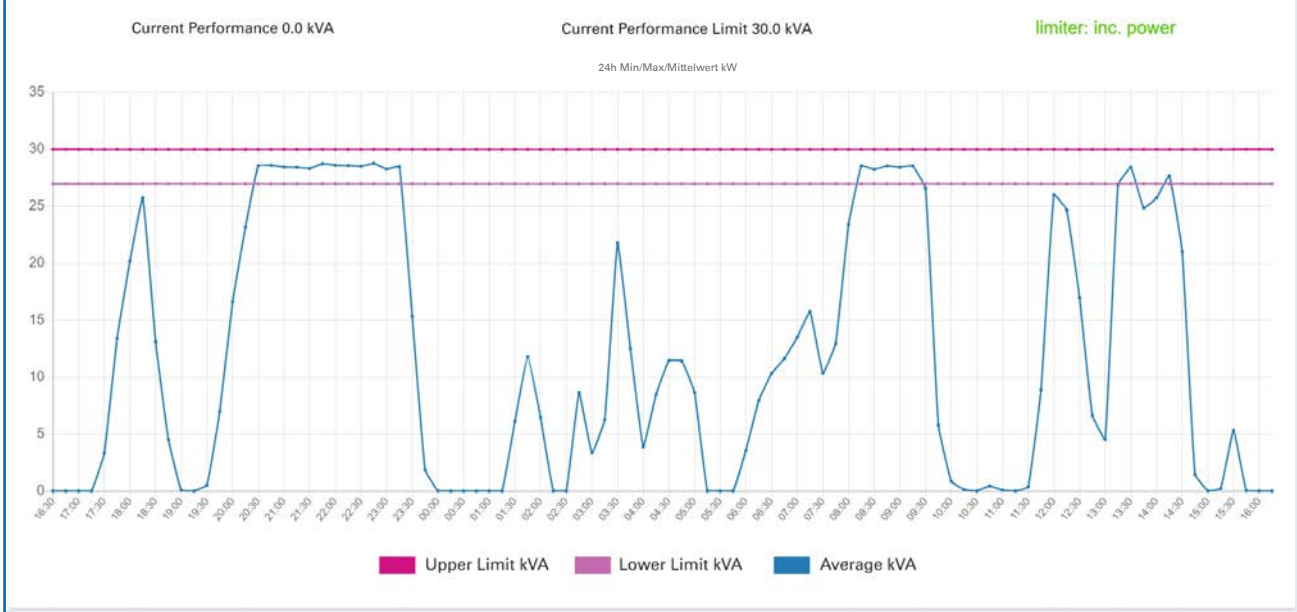
The chargers are equipped with additional modules that ensure data exchange with the MD LOAD Control Center.

Car and truck charging stations are connected via bus lines and also transmit status data.

TRIATHLON® Lithium-Ion batteries of the TC series transmit the current state of charge (SOC) and other information to the chargers via CANBUS during charging process.

The data communication can optionally be delivered via network cables or radio interfaces.

Endurance, productivity and maximum performance under all conditions



Picture 1: Required power valued over the past 24 hours

Software:

The MD LOAD Control Center will work together with a building's demand response or load management system to assure maximum power is available for charging the industrial batteries.

Furthermore, the additional modules in the chargers and the car / truck charging stations transmit current information about the state of charge of the batteries.

The MD LOAD Control Center controls the performance of the chargers using a smart algorithm.

Priority sequencing ensures optimal availability of the individual industrial trucks.

As an option, the performance history, various data and current state of charge can be accessed online. (see picture 1 + picture 2)

Among other things, the following data is displayed:

- Required power values over the past 24 hours
- Preset limit of the mains peak power
- Live view of individual chargers
- Live view of the battery state of charge (SOC)

Picture 2: Actual charging status of individual batteries

Function

Prioritization of the current output:

MD LOADmanagement dynamically regulates the energy distribution with an intelligent and demand-oriented priority algorithm so that charging always continues, albeit maintaining but not exceeding the peak load demand limit. This differs from other load management systems available in the market that only switch on and off the charges to manage the load.

Every customer utilizes exactly the required and optimal amount of energy available at the defined limit.

The batteries with a high state of charge (SOC) receive less current than the batteries with a low state of charge (SOC).

This ensures that there are no limitation regarding the utilization of the fleet and that all batteries receive exactly the amount of charge they need.

The predetermined maximum peak power demand limit can be set via a calendar function or time specification or alternatively be regulated automatically by the buildings demand response or load management system to assure maximum power is available for charging the industrial batteries.

MD LOADmanagement can be integrated into other peak load control systems at any time to ensure permanent and sustainable current drain without power peaks.

MD LOAD Control Center maintains a data log so that historical data can also be retrieved at any time.

Option:

As a building block for fleet management systems, we can facilitate a completely automatic transmission of all relevant vehicle application, battery and charger data.

Notes