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Application Report

Experience future mobility – today

Partner Etrix Ltd.
Area Transport and traffic technology

Transport and traffic technology

Electromobility

Exchangeable battery

Optimum monitoring

Partner

The Swiss company ETRIX Ltd., with its main office in Regensdorf, develops modern mobility solutions. The vehicle components are manufactured in several countries and assembled in Switzerland. Prior to delivery, the vehicles are put through a rigorous final inspection. In Regensdorf, ETRIX provides its own battery manufacturing as well as modern dynamometers for electric two- and three-wheelers.

ComatReleco products in use

- MRU - Monitoring relay

The sustainably-designed electric scooter from ETRIX Ltd. has a long service life and requires low maintenance due to being equipped with an exchangeable battery. The company promises customers that it will position itself in a ecological and sustainable manner. A central component of the scooter is the exchangeable batteries, which if needed can be replaced in a matter of seconds without extended downtime. In order to optimise the service life and security of these high-performance batteries one should avoid overcharging them. In addition to the integrated battery management system (BMS), the batteries are monitored online during the charging time. ComatReleco's monitoring systems are suited for the task.

No downtimes when loading scooter batteries

If you calculate total cost of ownership (TCO) of petrol and electric scooters, electric scooters demonstrate a cost advantage of 15%.

Likewise, the electric scooters are superior to petrol scooters with respect to performance, noise and odour emissions. Despite these advantages, professional fleet operators have thus far exclusively implemented petrol scooters.

What is the basis of this contradiction?

When it comes to electric scooters in professional use – e.g. for courier services – there are economic factors, such as downtimes for charging batteries. Regarding permanently installed batteries, charging times may be up to 8 hours. Accordingly, the scooters are not available for a long time.

The SMARTcharge system developed by ETRIX Ltd. is based on the separation of the vehicle and the battery pack. Up to 24 high-performance battery packs can be charged indoors. This considerably decreases the vehicle's downtimes and makes the vehicle attractive for delivery service at short and moderate distances. ETRIX is distinguished, for instance at Domino's Pizza, by its role in the deployment of 200 scooters in the largest two-wheeled fleet in Switzerland.

The monitoring process as a factor of success

High-performance batteries are not non-hazardous. Charging these highly sensitive units must be continuously monitored in order to rule out overloads and the associated risk of fire. All battery packs are for that reason monitored online. The monitoring devices of the Swiss company ComatReleco ensure that the batteries are charged according to the predetermined parameters. In case of overload, the system isolates the charging system from the grid. This is how complete operational safety is guaranteed.

ComatReleco and ETRIX Ltd.:
Partners for an innovative product

ETRIX Ltd., with its main office in Regensdorf, Switzerland, develops and builds electric scooters, in particular for professional use by service providers such as in the field of delivery services. The SMARTcharge concept especially allows business clients to profit, since range and availability of vehicles can be increased through efficient charging systems. For monitoring its charging stations, ETRIX has decided on the products from ComatReleco. Their high-quality monitoring devices can implemented as a result of their broad measuring range in small- and low-voltage systems. They provide reports in the event that the adjustable limit value is exceeded or not met. They can be quickly put to use due to their clear-cut menu navigation. Supply occurs in the voltages UC12–48 V or UC110–240 V.

Monitoring the SMARTcharge system

The high-quality monitoring devices from ComatRelecto come from the MR series and have been developed for monitoring of 1- and 3-phase systems. The devices are suited for monitoring of all electrical variables, such as voltage, current, performance (AC/DC), frequency, phase sequence or power factor $\cos\varphi$ and generating an alarm in the case of disturbances or faults. Servicing them is user-friendly. At the push of a button, the devices show measured values, user parameters and operating status. For the output there are two change-over contacts for 6 A, 250 V. Both contacts can be configured independent of one another. The devices correspond to the DIN 43880 standard, with a mounting dimension of 35 mm.

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