Depot chargers as a part of a comprehensive project for MPK Częstochowa.

For 30 years, the Enika company has been providing complete electric equipment and power electronics gear intended for public transportation such as tramways, trolleybuses, electric buses and trains. Thanks to its considerable ability and immense experience, Enika offers high quality equipment and full onboard integration of all components, as per our valued customers' specifications.

Thanks to its wholehearted acceptance of cutting-edge technologies, the company contributes meaningfully to protecting our planet. As such, we are always eager to participate in projects that aim to produce pro-ecological solutions, such as stationary and mobile chargers which can be used with electric buses, photovoltaic system components, power electronics equipment used in electric buses and trucks, or the environmentally-friendly Energy Reclamation System.

Enika supports various companies within the context of sustainable, ecological transportation. We have participated in a pro-ecological project for the Autosan company located in Sanok. We have also designed, manufactured and delivered an electric bus charging station to MPK Częstochowa. It is outfitted with eight two-stand stationary chargers, each with a capacity of 120 kW. As a part of that delivery, we also provided a mobile workshop charger with an overall capacity of 30 kW. Eight two-stand modules make it possible to recharge the entire MPK electric vehicle park in a matter of hours – in one place and at the same time.

The ENI-LZ400 stationary depot charger is intended for recharging electric bus batteries.

Each charger is outfitted with two 3.5 mb cables featuring type 2 COMBO plugs. Moreover, the side wall of each device is equipped with hangers which allow the user to arrange the cables in an orderly manner. The charger features a sealed casing made of thick, highly resilient steel sheet. The casing interior is divided into three main areas: the power electronics zone, the AC security zone and the DC security zone. The security areas are located in the lower part of the charger. The charger can be powered directly using the general-access energy grid (3 x 400 VAC).

The charger converts the 3 × 400 VAC voltage into 250 VDC ÷ 750 VDC voltage. The charger is activated automatically whenever a bus is connected to it. LEDs indicate the current status of the device — namely, its readiness, operation and faults, if any.

The device can operate in two modes. The first mode makes it possible to recharge two vehicles at the same time. In this mode, the maximum recharge voltage for each vehicle is limited to half of the device's nominal voltage, i.e. 30/40/60 kW.

The second mode allows the user to charge a single vehicle using the full nominal voltage, i.e. 60/80/120 kW. The mode is selected automatically and is contingent on using the CCS2 connectors at the time.

Additionally, MPK Częstochowa uses a orkshop charger manufactured by Enika. This device (nominal voltage: 30 kW) is highly mobile, which means it can be easily redeployed across the depot. It can also charge MKP electric vehicles.

The ENI-LW400 mobile workshop charger is intended for recharging electric bus batteries. The charger is powered directly by the 3 x 400 VAC industrial power grid.

The charger can be operated using a small control panel.

The same applies to the charging process. Next to the panel is an emergency shutdown button and a small operating panel which prevents unauthorised use. The charger is equipped with four multi-directional wheels which allow for efficient redeployment. Moreover, the device is outfitted with one 4 m cable capped with a type 2 COMBO plug.

One of the shorter charger walls contains a handle to facilitate the repositioning process. The opposite side houses a dedicated charging cable storage area. The charger also comes with its own integrated cooling fans and air filter.

The charger converts the 3 × 400 VAC voltage into 250 VDC ÷ 750 VDC voltage. The charger begins to operate on connection to a three-phase power source and attaching the small panel to the upper casing. The diodes and visuals on the control panel intuitively represent the current relationship between the charger and the bus.

The Enika-manufactured chargers installed across the MPK Częstochowa depot are currently used to charge fifteen new vehicles (AUTOSAN Sancity 12 LFE). Enika has also provided complete drive and control systems to go with them.

Text and resources by courtesy of: Enika Sp. z o.o.

AUTOSAN Sancity 12 LFE electric buses are currently used for everyday public transportation, and carry passengers all across the city of Częstochowa. To reach Częstochowa from the factory in Sanok, the ordered buses drove for some 400 km without having to recharge along the way. The journey was an excellent test for the drive system designed by Enika engineers. Enika's technological solution deployed here is characterised by excellent energy efficiency which allows the buses to drive a long way without a hitch.

It is of note that Enika has outfitted the AUTOSAN display bus with a complete drive and control system. Beforehand, the display bus had been tested by MPK Częstochowa.

Enika strongly believes in sustainable transportation. To this end, it has participated in numerous green projects. Electric vehicles containing Enika components and the dedicated infrastructure can be seen in Częstochowa, Lublin, Warsaw, Zielona Góra, Szczecinek, Środa Śląska and Lviv. The company is currently gearing up for another green project.