



Managing e-vehicles digitally: the intelligent MAN eManager for buses/coaches and vans

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The series production of the MAN Lion's City E is underway. Across Europe, this e-bus is being rolled out in more and more cities for use in local public transport. MAN Truck & Bus is currently restructuring the services it offers with the MAN eManager, so that fleet managers can manage their e-vehicles digitally and in the best way possible. In future, the centralised system for efficient charging management will also be available with selected functions for the MAN eTGE. Whether managing e-buses or e-transporters, the digital central command system enables fleet managers to keep track of various vehicle parameters, including the battery and ambient temperature, from the convenience of their desk.

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- **Digital tool on the RIO platform – can be ordered on MAN Marketplace**
- **New solutions: MAN eManager S and M**
- **Certain MAN eManager S services set to become available for the MAN eTGE**
- **Simplifying Business: digital services round off MAN's holistic offering to help users transition to e-mobility**

The success story continues: following start of production for the fully electric MAN Lion's City 12 E last year, the articulated e-bus has also been rolling off the assembly line since April. MAN Truck & Bus are receiving orders for e-buses from across Europe every single month, and the manufacturer has been pooling its experience from long-term field trials and from its extensive "Electrifying Europe" roadshow, which involved visits to numerous customers all over Europe. The future is now!

The findings that MAN has gathered on how municipalities and transport operators should be supported in their transition to emissions-free mobility

MAN Truck & Bus is one of Europe's leading commercial vehicle manufacturers and transport solution providers, with an annual revenue of more than 9.5 billion euros (2020). The company's product portfolio includes vans, trucks, buses/coaches and diesel and gas engines along with services related to passenger and cargo transport. MAN Truck & Bus is a company of TRATON SE and employs more than 37,000 people worldwide.



are also flowing into a new offering for the MAN eManager, the digital command centre for e-buses. MAN recognised a long time ago that digitalisation would be one of the key factors (in addition to zero-emissions mobility and automation) to drive the transformation that is sweeping across the transport industry, and as a result integrated it into its strategy. Even today, digital solutions are a lived reality in all areas at the commercial vehicle manufacturer.

The MAN eManager initially underwent field trials as a solution for intelligent charging management. Now, the remote service is available on the RIO platform – the cloud-based platform from TRATON – in two new solutions: the MAN eManager S with basic functions, and the MAN eManager M with an advanced set of product features, both of which can be ordered on the MAN Marketplace.

MAN eManager S

The basic package includes elementary functions that make it easier to manage fleets with e-vehicles. Two key examples of this are the two options for charging the batteries: if “Charge immediately” is selected, the vehicle starts charging as soon as it is connected to a charging post and charging current is available. With the “Timed charging” option, the operator can set several timers simultaneously, so that the charging process is programmed for a certain departure time. Departure every Monday at 7 a.m.? When this function is activated, the driver can rest assured that the bus/coach will always be charged in time for departure, as it starts the charging process automatically – depending on the available charging current and battery charge level. The precondition, of course, is that the vehicle is connected to a charging post. And if the driver unexpectedly needs to use the vehicle sooner and therefore charge it earlier than scheduled, they can simply start the charging process manually at the press of a button.

With MAN eManager S, operators also have the option to thermally precondition the inside of the vehicle – both when the battery is being charged then and there and when it is being charged at a later point via the “Timed charging” functionality. In both cases, just one click of the mouse ensures that the e-bus leaves the depot with a pleasant interior temperature.



The preconditioning process also has a positive effect on the remaining range, as less energy is required for the air-conditioning at the start of the trip.

If there is an error during the charging process – for example if a charging cable is not correctly attached – the fleet manager will see this in the application so that they can intervene in time. There are a total of six different charging states that provide detailed information on the current situation. This means that the fleet manager can immediately see whether a vehicle is currently connected to the charging post, is being charged, or is already fully charged and ready to start another trip.

The MAN eManager basic package also allows the user to keep constant track of other parameters, such as the battery charge level in percent, the remaining range in kilometres, the charging mode, the vehicle status and the time of the last update. All in real time.

MAN eManager M

The MAN eManager M package comes with other features in addition to the basic functions. For example, the operator can see even more information on the vehicle and battery in the application. The remaining battery capacity is displayed in kWh and the vehicle state options include the addition of “Drive” on top of “Ready to go” and “Not ready” options.

The M package also comes with a functionality that is key for efficient fleet management: it enables the operator to analyse average values for consumption, recuperation and driving distance, which can be recorded and compared for a certain period of time for just one or several vehicles. Operators also benefit from a detailed overview of the daily battery charging and discharging processes, air-conditioning, ambient temperature and energy consumption values, as these are all saved in the history. In addition to the start times and duration of the charging processes, operators can retrieve the remaining battery capacity in kilometres and kWh, and the battery charge level in percent for the start of the charging/discharging process. Finally, the MAN eManager M displays energy consumption and



supply, minimum and average values of the charging and discharging current, and parameters for battery voltage and temperature.

No matter whether you opt for MAN eManager S or M, both are true to the motto of "Simplifying Business". Both options make the entire e-vehicle fleet charging process – and in turn a fleet manager's day-to-day work – much easier, more efficient and more transparent thanks to the detailed monitoring functions and flexible remote operation capability. MAN eManager simultaneously ensures that vehicle availability is maximised and that the battery charging process is always aligned with the timetable.

Some of the MAN eManager S functionalities for the electric variant of the solobus and articulated bus are also set to become available for the MAN eTGE in the future: the charging status, battery charge level and the remaining battery capacity (in km) of the e-transporter can also be retrieved via the digital command centre.