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Level crossing technology.
Safe. Reliable. Capable.



**GMC-E
battery charger**

GMC-E battery charger

Applications

Our Type **GMC-E** (modular controller-regulated expanded-function rectifier) battery chargers are suitable for charging of lead-acid accumulators of 9, 12, 15, 18 or 30 cells. The various appliance types can thus be used to charge lead-acid batteries of rated voltages of 18V, 24V, 30V, 36V and 60V.

The charger-rectifier was originally developed for charging of equipment-building batteries for level-crossing control systems. Appliances of this type are nowadays also used in other applications, such as for actuation of platform-screening doors and charging of signal-cabin batteries. These units are extremely robust and can be operated within an expanded temperature range of -25°C to $+70^{\circ}\text{C}$.

Types

The battery chargers are designed for connection to a 230 VAC mains supply with a tolerance of $\pm 10\%$ and a frequency of 50 or 60 Hz. The input-side (mains-side) fusing system must be designed for a max. 5.2 A current. The following appliance types are available (max. output current also stated):

GMC-E 18V / 36A

GMC-E 36V / 18A

GMC-E 30V / 20A

GMC-E 24V / 27A

GMC-E 60V / 10A



Features:

- High availability
- Easy installation
- Clear and simple operation
- Versions available for virtually all level-crossing control systems and signal-cabin designs
- Digital inputs and outputs for control and monitoring functions
- Operation at ambient temperatures from -25°C to $+70^{\circ}\text{C}$



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GMC-E

battery charger

Function

Our battery chargers ensure, in conjunction with the buffer batteries, that power supply is maintained with certainty for a defined period in case of a mains power failure. The charge state of the batteries is therefore continuously monitored by the appliances.

Operation

The charger is operated by means of eight buttons on its front panel. All states and parameters are shown on a two-line display. All settings can also be displayed on a desktop or laptop PC via an RS232 interface. Short descriptions of the most important settings can be found below.

Subject to technical changes

GMC-E battery charger

Trickle charging

The trickle-charging voltage can be set to the value specified by the battery manufacturer using the keypad on the front panel of the charger unit. A temperature sensor can be connected to the appliance and the trickle-charge voltage adjusted as a function of temperature in order to enhance battery service-life.

Boost charging

Boost charging is active only provided it has been parametered on the keypad. Changeover to the higher charge voltage parametered occurs immediately if there is no activation signal from the level-crossing control system while boost charging is active and battery voltage falls below the boost-charging threshold during “Trickle charging” mode. If an activation signal is received from the level-crossing control system, the occurrence is stored and changeover to the higher charge voltage occurs only once the level-crossing control system has revoked the activation signal. Like the trickle-charging voltage, boost-charging voltage is also adjusted as a function of temperature.

Current limitation

Maximum output currents can be set as a function of the activation status of the level-crossing control system. Charge currents can be selected from 2A to 36A in increments of 1A.



Standard level-crossing control system application



Keypad and display on front panel

Subject to technical changes

GMC-E battery charger

Remote charging monitoring

The GMC charger features a voltage-measuring stage which activates a signalling relay with two changeover contacts when voltage falls below a configured threshold. One contact of this relay is applied to the signalling circuit of the reporting point, e.g. the signal cabin, for remote charge-state signalisation. The active states of the signalling relay can be parametered, and can be set to a continuous signal or to a 1:40 cycle.



GMC-E
charger with front panel removed

Development status

More than 3000 battery chargers have been installed for DB Netz AG and for private railway operators since the market launch in 1999. As a component of our Type RBÜT, RBUEP and BÜP93 level-crossing control systems, the charger assures the high availability of our systems. Since the introduction of this charger, both its hardware and software have been updated several times to conform to the latest state-of-the-art. This is apparent from the individual model designations of GMC, GMC-E, GMC-E1 and GMC-E2, and the software version stated on the model identification plate.

Subject to technical changes



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