

ATG starting current limiter for DC Motors

The ATG starting current limiter (DC-motor-manager) is an intelligent, electronic switch for the direct connection and operation of DC permanent magnet motors on a 24V wiring system, as found in commercial vehicles. The device is simply connected into the motor supply lines, existing switching devices can continue to be used. An additional supply voltage is not required. The device is activated by applying the 24V motor voltage and switches the motor on with current limitation. When the supply voltage is switched off, the motor is stopped electronically by the device. During operation, the device fulfills various control and monitoring functions. In the current version, the device is intended for motors up to a maximum of 1000 W (rated current up to approx. 45 A).

Overview of functions:

- 1) Electronic **switching on and off** of the motor - Relief of the motor contactor
- 2) **Current limitation** in amount and time to protect the carbon brushes and protect the motor in case of a fault (e.g. mechanical blocking). Avoidance of demagnetisation in cold conditions.
- 3) **Undervoltage detection** before the motor starts to avoid deep discharge of the on-board battery.
- 4) **Signalling of the operating status** and occurred errors via three colored LEDs on the unit.
- 5) **Monitoring function:** operating hours counter, number of trips, number and types of faults.
- 6) **PC interface:** The measured values can be read out via an integrated interface on a terminal or PC. In the same way, parameters such as the maximum current can be changed or the counters can be reset (e.g. after an exchange or overhaul of the motor in the factory).

Main applications: Auxiliary power units in rail and commercial vehicles (pumps, compressors,...)

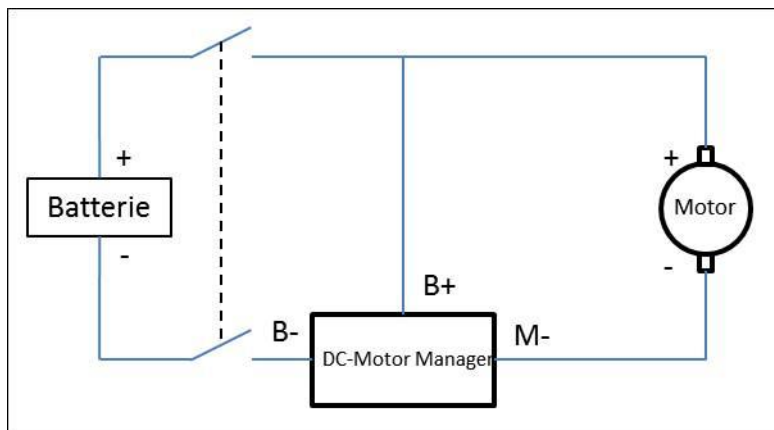


Design

The electronics of the starting current limiter is arranged on a printed circuit board. In principle, it consists of a powerful power semiconductor (= electronic switch) with an active freewheel circuit as well as various components for the protective circuit, a shunt for current detection and a microcomputer which carries out the control, current limitation and monitoring. The connection of the supply lines to the motor and battery is realized with screw connections directly on the circuit board. Most components are SMD-assembled.

The printed circuit board can be supplied alone or mounted in a robust aluminum housing, protected against dust and water. Three light emitting diodes for operating status indication are also located on the circuit board and are visible from the outside via a transparent feed-through in the housing version.

Electrical connection:



Technical data: **ATG Starting current limitation E01-24-90**

Electrical:

- Supply voltage 24VDC, +/- 30%
- Current limitation to 90A (adjustable between 15 and 100A)
- Electrical connection (motor and supply) via three connecting wires. Exit of the strands at the bottom of the housing.

Mechanical:

- Die-cast aluminium housing
- Protection rating IP54 (except underside)

Environmental conditions:

- Operating temperature -30 to +40°C
- Storage temperature -40 to +80°C
- Non-condensing humidity