Title (en)

SWITCHING DEVICE WITH ELECTROMAGNETIC LATCHING MECHANISM

Title (de)

SCHALTGERÄT MIT ELEKTROMAGNETISCHEM SCHALTSCHLOSS

Title (fr)

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Application

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Priority

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Abstract (en)

[origin: WO2014023326A1] The invention relates to a compact and simply constructed switching device (1), particularly for supplying an electric motor, which facilitates both switching under normal load as well as disconnection upon overload and fast disconnection in case of short circuit. The switching device (1) comprises a main contact system (2), having at least one fixed contact (11,12) and at least one associated moving contact (13,14). For closing and isolating a current path (10), the moving contact (13,14) can be reversibly moved relative to the fixed contact (11,12) between two switching positions, namely a closed position and an open position. The switching device (1) also comprises a bipolar electromagnetic drive unit (3). The drive unit (3) comprises a moving armature (25) and a first stationary magnetic coil (21) and a second stationary magnetic coil (22) for reversibly moving the armature (25) between two armature positions that are stabilised in a permanently magnetic manner. The switching device (1) finally comprises a coupler (4) for transferring an actuating force from the drive unit (3) to the moving contact (13,14). The coupler (4) can be moved between an operating position corresponding to the closed position of the moving contact (13,14) and a trigger position corresponding to the open position of the moving contact (13,14). The switching device (1) is designed in such a manner that when the magnetic coils (21,22) are de-energised, the moving contact (13,14) is held in the open position in a mono-stable manner, that selective excitation of the first magnetic coil (21) enables the moving contact (13,14) to move into the closed position, and that the selective excitation of the second magnetic coil (22) enables the moving contact (13,14) to move into the open position for a maximum disconnection time permitted for a short circuit in the current path (10).

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Citation (search report)

See references of WO 2014023326A1

Cited by

DE102021122028A1; WO2023025794A1

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