



CHARGING CONNECTOR LOCK APPLICATION

Designing the charge port of an electric vehicle



The charging port prevents the connector from being removed prematurely to protect the owner from being injured. The secure locking of the charging connector is done by moving a metal pin into the connector via an electrical actuator. All charging ports require at least two electronic components: A charge lock actuator and a position sensor to detect the position of the lock pin. For the DC motor control, TDK offers the Micronas HVC embedded motor controller family. In addition, several 3D Hall-effect position sensors, for example the Micronas HAC 373x or HAC 3930, can be used for this type of application.

Key Features

HVC Motor Controller:

- Up to 6 motor outputs for the controlling of three independent DC motors for e.g. locking block, charge door, ...
- 7 general-purpose I/Os for e.g. indicator LEDs (warning/charging) or the locking sensor's output

3D Hall Sensors:

- Functional safety level ASIL B
- Contactless detection (wear-free)
- Leaded TO or SMD package

Key Benefits

- Safe charging procedure
- Indication of charging status
- Optional comfort functions

Key Applications

- Charge lock actuator
- Lock pin position detection

