

Battery operated LOW VOLTAGE INVERTER with SiL-2 radio networking



for propulsion technology, mechanical engineering

Technology field

Propulsion technology, MCR technology, bus systems and radio, software development

Project requirements

The **project objective** was the development and production of a motor and device control for a mobile wheel lift in various fields of application and environmental conditions. A particular challenge is the suitability for particularly heavy loads, but also the everyday operation of car workshops or breakdown services in changing environmental conditions. The individual columns of the lifting platform can be operated wirelessly with rechargeable battery and SiL-2 compliant communication via radio as well as stationary with mains connection and CAN bus. Due to the necessary electronic synchronisation control in case of unequal load distribution and the safety monitoring of the possibly radio-operated system, the functional safety of the network was a great challenge. Simultaneous operation of up to eight columns is possible in battery mode, and up to twelve columns in mains operation. Each column is equipped with a control element.

Facts/Highlights

- Splash and condensation water protected MSR and supply unit
- Functional safety with SiL-2 (IEC 61508) even with wireless networking of the columns
- Power supply via battery (48 V DC) possible, motor currents up to 100 A
- Networking via CAN bus or radio

Services of KNESTEL

Potential analysis, target price estimation, project management, specifications, project planning, development of software and hardware, electrical and mechanical design, EMC test, prototyping, series production

Possible Applications

- Autonomous, battery operated systems
- Mobile lifting and transport vehicles
- Electric drives of all kinds

About KNESTEL: Knestel has been developing and producing customized electronic and mechatronic special solutions in the fields of motor and machine control, frequency converters, image processing, MCR technology, software development, radio, bus systems and gas analysis for 40 years. We support our customers from the idea to the finished implementation. Individual solutions and concepts - technically up to date. Our production - electronics manufacturing, device and switch cabinet construction, Production of subassemblies, assembly and mechanical processing - is equipped with the latest technology.