

Tailored assembled solutions incorporating calculated safety

Safety encoders from Johannes Hubner Giessen with Fault Exclusion assembly

Johannes Hubner Giessen is the specialist for encoder system technology. In addition to its SIL/PL certified safety encoders the company now offers with immediate effect a reliable mounted solution with fault exclusion incorporated. From the customer's perspective, the safety guarantee is underlined by a declaration of conformity provided by the encoder specialists.

The service offered by the company has always been distinguished by developing and installing individually assembled solutions. At the same time the European Machinery Directive has placed the focus on safety-relevant aspects. To realize certain safety functions for a given application system operators are required to install approved components such as encoder systems up to SIL 3 (to EN 61508) or PL e (DIN EN ISO 13849). „However, what is the use of a safety-certified encoder if the mechanical connection with the shaft of the application has not been sufficiently dimensioned to ensure reliable transmission of the encoder signals“, points out Thomas Brandenburger, head of the Project Management department.

Safety calculations made for all relevant attached components

In response to this problem Johannes Hubner Giessen has developed a mounted solution with fault exclusion incorporated. The relevant mechanically attached components are individually calculated and sized according to the demands of the respective application. Main components include the threaded connections with the shaft of the application, the flange adapter shaft and the torque bracket. The calculations include fatigue strength, the



A series 41 safety encoder in combination with a standard encoder (e. g. series 6/60).

load-bearing capacity as well as other safety factors. If desired, Johannes Hubner Giessen will also carry out the installation work on site. Mechanical assembly with incorporated fault exclusion significantly simplifies risk assessment and acceptance on the part of the customer. The reason is that thanks to the declaration of conformity regarding fault exclusion to DIN EN ISO 13849 the customer is able to rely on the Hubner solution and need not give further consideration to the installed encoder system when assessing the safety of the overall system.

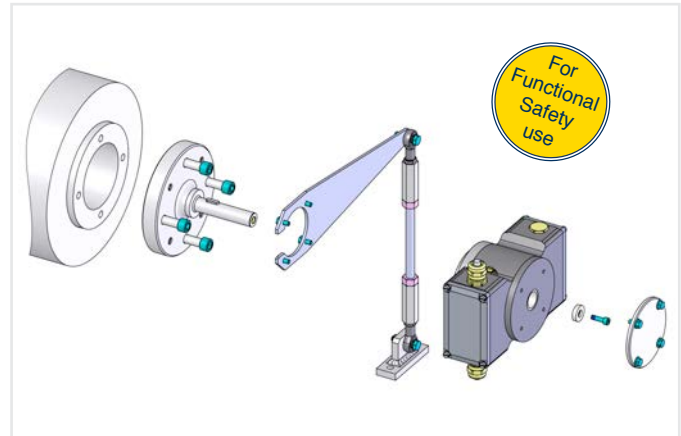
Reliable documentation

“It goes without saying that the customer must ensure certain parameters are maintained to fulfil guarantee and liability requirements on the part of our company”, emphasizes Thomas Brandenburger. These include maximum speed, limit values for shock and vibration loads as well as precision installation to ensure a certain eccentricity is not exceeded. To that end the Hubner system solution includes

installation instructions as well as an installation report. Following installation measurements are performed on the newly attached solution and the results documented to verify compliance with all of the parameters. Consequently, the safety documentation handed over to the customer contains the measurement values as well as a summary of the results of safety relevant calculations.

Modernization – a challenge

Significant challenges often arise when developing safety solutions for projects to upgrade existing plant and systems. Thomas Brandenburger explains: „Generally speaking, a new plant is unproblematic because the motor and shaft are new so it is possible to plan the envisaged installation together with the customer.“ In contrast, assessing the mechanical interface when upgrading existing plant and machinery is a demanding challenge, “What holes have already been drilled in the shaft, what material are we dealing with, has



A series 41 safety encoder including fitting directly onto the shaft of the application.

the shaft been hardened and so on? The combination of materials between the attached components is an important aspect with regard to the safety guarantee. With our declaration of conformity in his hand the customer is on the safe side.”

Your benefits

- Designed and engineered for “heavy duty applications”
- Customized system solutions “from a single source supplier”
- Safety-certified encoders and mechanical attachments offer simplified risk assessment and acceptance with fault exclusion guarantee according to DIN EN ISO 13849
- Individual safety calculations
- Hubner Giessen services include taking responsibility for installation and documentation

About Johannes Huebner Fabrik elektrischer Maschinen GmbH

Steel and rolling mills, mining, container cranes, railway technology, hydroelectric power plants, wind turbine generators and power systems: Johannes Huebner Giessen is widely recognized as the industry leader in the fields of encoders for heavy industry as well as energy and drive technologies. The specialist offers an all-round complete service from determining on-site installation conditions through to installing the complete encoder systems. The company presently employs 100 staff.