

Safety in any situation

Safe rotary encoders for different ambient conditions

Safe absolute multiturn rotary encoders from TR-Electronic can solve position measuring tasks in virtually any situation. The basis is the proven dual scanning system with redundant signal acquisition and processing, decentrally integrated into the rotary encoder. The rotary encoders in this family are now available certified with the most advanced interfaces: PROFINET and PROFIBUS with PROFI-safe protocol, Ethernet Powerlink with openSAFETY protocol and Functional Safety over EtherCAT (FSOE). In addition, all new rotary encoders are UL-listed – making the import of correspondingly equipped machines and systems to the USA and Canada even easier.

The safety rotary encoders can be suitably equipped for different ambient conditions:

For ATEX zones 2/22 certified variants of the standard mechanism in nominal dimension 75 mm are available as solid and hollow shaft rotary encoders. (ADV75M, ADV75M). The SIL rotary encoders can also be used under the harsher conditions of Zone 1/21: The protective housing design with nominal dimension of 88mm and solid and blind shaft connection fulfills all necessary conditions for use in these atmospheres (ADV88M, ADS88M).

Thanks to the selection of special housing materials and appropriate painting, the CD_75M is also seawater-resistant and can withstand many years in damp salty atmospheres without functional limitations.

If the environmental conditions are even more aggressive, a completely stainless steel housing protects the robust encoder electronics from harmful influences.

TR rotary encoders can also handle a combination of different environmental conditions. Stainless steel housings are a standard requirement in the food sector – and if there is the additional risk of dust explosions, as in flour mills, for example, the safe absolute rotary encoders can also be built with stainless steel ATEX housings.

Usually the rotary encoders are equipped with both optical and magnetic scanning for diverse redundancy. This feature offers high reserves for the design of safety functions; at the same time, the optical main scanning enables reliable signal output at high speeds.

If there is a risk of condensation, the optical system can be omitted entirely with a dual-magnetic sensor design. The performance of this dual scanning system is optimized for applications in wind turbines.

Even in the basic version the permissible shaft loads are quite high, thanks to double bearings. If these are inadequate, the shaft load can be further increased with a collar bearing. The collar bearing, fitted by TR, is included in the safety analysis – the parameters for the overall system can be used directly for the design.

With this multitude of measures the safe absolute rotary encoders from TR-Electronic can be integrated into almost any application which requires

safe position detection, whether in the normal industrial environment or under adverse environmental conditions – seamlessly and transparently, from the process right through to the higher-level safety control.

TR-Electronic GmbH
Eglishalde 6
78647 Trossingen
www.tr-electronic.com
info@tr-electronic.de

Product-Link:
<http://www.tr-electronic.com/products/sil.html>



CDV75M_EPN.jpg

SIL certified absolute encoder CD75M by TR-Electronic.



CDV75-Vorsatzlager.jpg

Safety-certified multiturn encoder with heavy-duty collar bearing by TR-Electronic.



CDV100M.jpg

If SIL meets ATEX and acids: Safety certified encoder in ATEX-suitable stainless steel housing CDV100M by TR-Electronic.