

# Magnetic gear wheel encoder RGM2 series

## FAQs

### ESD stability

Measurements in the EMC laboratory indicated that the sensor's ESD stability was up to 30kV. This also relates to the open connection sockets for the I2C interface (in their normal state, these are also protected by a metallic cover sheet).

The extremely high level of ESD stability is achieved thanks to the robust enclosed metal housing of the sensor. The shielding of the connection cable is bonded with the electroconductive housing in the sensor - thus making any additional assembly efforts for shielding unnecessary.

### Spacing between sensor and gear wheel

In the standard sensor version, the following values are set for the spacing between the sensor and the gear wheel (air gap):

d= 0.15mm for gear wheel module M = 0.3  
d= 0.3mm for gear wheel module M = 0.5

Spacings greater than the set d values can also be used. They can be implemented in two ways:

- ... By the user: position sensor at the required distance from the gear wheel and then modify the signal parameters via the I2C or PuV interface.
- ... By VS Sensorik - please request corresponding details!

A comparatively high level of crash safety is provided by the cover sheet over the sensor elements and the robust configuration of the sensor elements (this means additions such as ceramic dies are unnecessary).

### Amplitude stabilisation

The sensor IC used here makes it possible to carry out signal amplitude stabilisation.

The following notes must be followed in this regard: if there are any deviations from the optimum parameters in the sensor system, e.g. as the result of mechanical, thermal or ageing-related influences, amplitude stabilisation may lead to reduced signal quality. Furthermore, it must be borne in mind that mechanical faults in the sensor system (e.g. eccentricity deviations due to radial run-out by the gear wheel) are not eliminated despite activated amplitude stabilisation. They are only "masked" and are therefore no longer noticeable at first glance.

Another quick note: modern control units in which the sensor signals are processed usually have a much more sophisticated algorithm for correcting signal parameters - such sophistication cannot currently be achieved in such a compact sensor.

### Gear wheels

The quality of the gear wheels is significant for the sensor system. There is often a conflict between the "mechanical" specifications on the production drawing and the actual quality of the sensor signals. At VS Sensorik, we offer extensive know-how and highly effective sensor technology that allow us to optimise the signal quality of the gear wheels and check the quality efficiently.