

RFC-4800: Models with Internal Shielding

In all **RFC-486x models** of the RFC-4800 series, an internal shielding protects the Hall-effect sensor electronics from external magnetic interference. However, in the two-part, contactless models that use an external position marker or magnet, this internal shielding also influences the magnetic coupling and thus affects the overall system behavior.

Except for the features mentioned below, the data in the respective datasheets of the RFC-4800 series applies.

a) Additional linearity error

The magnetic field is influenced by the internal shielding, which introduces an additional linearity error. This error increases as the distance between the position marker/magnet and the sensor becomes larger. The magnitude of this additional error also depends on the specific type of position marker used.

The maximum additional linearity errors [°] within the permissible working range are:

Z-RFC-P02 / P04 / P08 / P20 / P23 / P31	up to 0.8°
Z-RFC-P41 / P43 / P47	up to 0.6°
Z-RFC-P01 / P03 / P07 / P30	up to 0.3°
Z-RFC-P16 / P18	up to 1.6°
Z-RFC-P17 / P19	up to 0.4°

b) Hysteresis

The internal magnetic shielding also contributes to the output signal hysteresis. depending on the specific position marker used.

Z-RFC-P01 / P03 / P07 / P30	accord. data sheet RFC-4800 (typ. 0.1°).
Z-RFC-P02 / P04 / P08 / P20 / P23 / P31	approx. 0.5...1°
Z-RFC-P16 / P18	approx. 0.5...1°
Z-RFC-P17 / P19	approx. 0.5...1°
Z-RFC-P41 / P43 / P47	approx. 0.5...1°