

## Appendix B release 1.0

### **1. Occurrence of initial calibration delay time $t_{d,input}$**

If there is no input signal (standstill), a new initial calibration is triggered each 0.7s. This calibration has a duration  $t_{d,input}$  of max. 300 $\mu$ s. No input signal change is detected during that initial calibration time.

In normal operation (signal startup) the probability of  $t_{d,input}$  to come into effect is:  $t_{d,input} / \text{time frame for new calibration } 300\mu\text{s} / 700\text{ms} = 0,05\%$ .

After IC resets (e.g. after a significant undervoltage)  $t_{d,input}$  will always come into effect.

### **2. Magnetic input signal extremely close to a switching threshold of PGA at signal startup:**

After signal startup generally all PGA switching into the appropriate gain state happens within less than one signal period. This is included in the calculation for  $n_{DZ-Start}$ . For the very rare case that the signal amplitude is extremely close to a PGA switching threshold and the full range of following speed ADC respectively, a slight change of the signal amplitude *can* cause one further PGA switching. It can be caused by non-perfect magnetic signal (e.g. amplitude modulation due to tolerances of pole-wheel, tooth wheel or air gap variation). This additional PGA switching *can* result in a further delay of the output signal ( $n_{DZ-Start}$ ) up to three magnetic edges leading to a worst case of  $n_{DZ-Start}=9$ . Due to the low probability of this case it is not defined as max. value in the data sheet.

(For a more detailed explanation please refer to the document "TLE4941/42 - Frequently Asked Questions").