



Further information about the provided data

- Measurement results can be found in the `ResultsMeas[File].csv` file. Measurements of Mix bearings are averaged per cage revolution and bearing A, B, C. Measurements at 2000 and 4000 rpm are saved in different files because of the different vector length. Measurements of steel bearings are averaged over the whole sampling time, thus, only one value is retrieved per test point.
- For each test point the mean value and standard deviation of the three measured bearings over all revolutions in the measurement time is provided.
- The files `ResultsCalcStatic.csv` and `ResultsCalcEnhanced.csv` contain the calculated results for each test point with the corresponding model.
- In the files `[Bearing]_[Name].mat` both measured voltages, V_G and V_M are provided as timeseries in version 7 MAT-files.

Experimental details

- All 12 bearings in the table below are displayed in the order they were tested, left to right.
- The applied generator voltage V_G is a sine wave with an amplitude of $\hat{V}_G = 3 \text{ V}$ and a frequency of $f = 20 \text{ kHz}$.
- The sampling rate was set to $f_s = 10 \text{ MS/s}$.
- The sampling time was 3 seconds for the measurements with 2000 rpm and 1.5 seconds for the measurements with 4000 rpm.
- The capacitors of the AC bridge were assumed as a capacitance and a resistance in parallel and measured $C_1 = 1.003 \text{ nF}$, $C_2 = 1.004 \text{ nF}$, $C_3 = 1.088 \text{ nF}$ and $R_1 = 35.8 \text{ M}\Omega$, $R_2 = 36.3 \text{ M}\Omega$, $R_3 = 42.2 \text{ M}\Omega$
- The high impedance input of the oscilloscope was retrieved from the datasheet as $C_M = 17.5 \text{ pF}$ and $R_M = 1 \text{ M}\Omega$.
- The open capacitance of the test rig was measured using hybrid bearings $C_{\text{open}} = 167.2 \text{ pF}$