FAQ - Tips and tricks

Advantages due to the application of the 87 Hz-technology
Headline

Question:
Which advantages result from the application of the 87 Hz-technology?

Answer:
The so-called 87 Hz-technology operates a three-phase standard motor of 230 V (delta) / 400 V Y, 50 Hz in triangle connection at a frequency inverter with 400 V mains voltage. The frequency inverter (400 V) is supposed to supply the triangle current of the motor. Moreover, the parameter setting of the maximum frequency (C0011), as well as a v/f-reference point (C0015) is set to 87 Hz.

There are following advantages:

- The motor's setting range is increased by factor $\sqrt{3}$ (e. g. from 1:50 to 1:87).
- The motor's efficiency is improved, as the rated speed is increased. The slip (absolute), however, is not modified, but it decreases in proportion to the rated speed.
- The motor supplies higher power ($P = M * \omega$), therefore a smaller, cheaper motor can eventually be selected for the application.
- The speed of existing machines can be increased by applying the 87 Hz-technology (speed increase) without modifying the motor and/or the gearbox.

Notes for the application of 2-pole motors:

- Consider the increased speed (approx. 5000 rpm) of 2-pole-motors.
- Due to the low inductance of these motors it is useful to reduce the Umin-increse (C0016).
- 8200 vector controller only: If a flying circuit is used, the current can be doubled by means of code C0311 Bit 2 (software version ≥ 3.5; see **Optimisation of the flying circuit**, Doc-ID 200414372).

Motor, General/Basics of drive&automation
Search tree

Drive_performance, Drive_selection
Key words

-- general --	-- no specification --	Basics of drives
Industry	Application	Topic

200501436	23.08.2005
Doc-ID	Last update