**Torque – Inertia Relation and Mechanical Setup Analysis for**

**DT4260-24-055-04H-PT 24VDC 4000RPM 1814-0067MOTOR (telcointercon) BLDC of DRV8312EVM KIT**

This document is prepared for mechanical construction of BLDC motor to flywheel system. Wheel dimension and mass with respect to desired motion profile is analyzed.

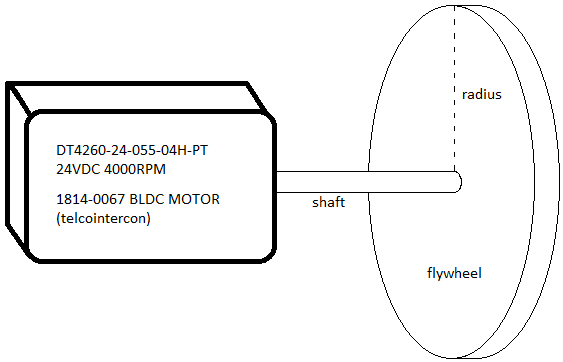


Fig.1: Desired Setup

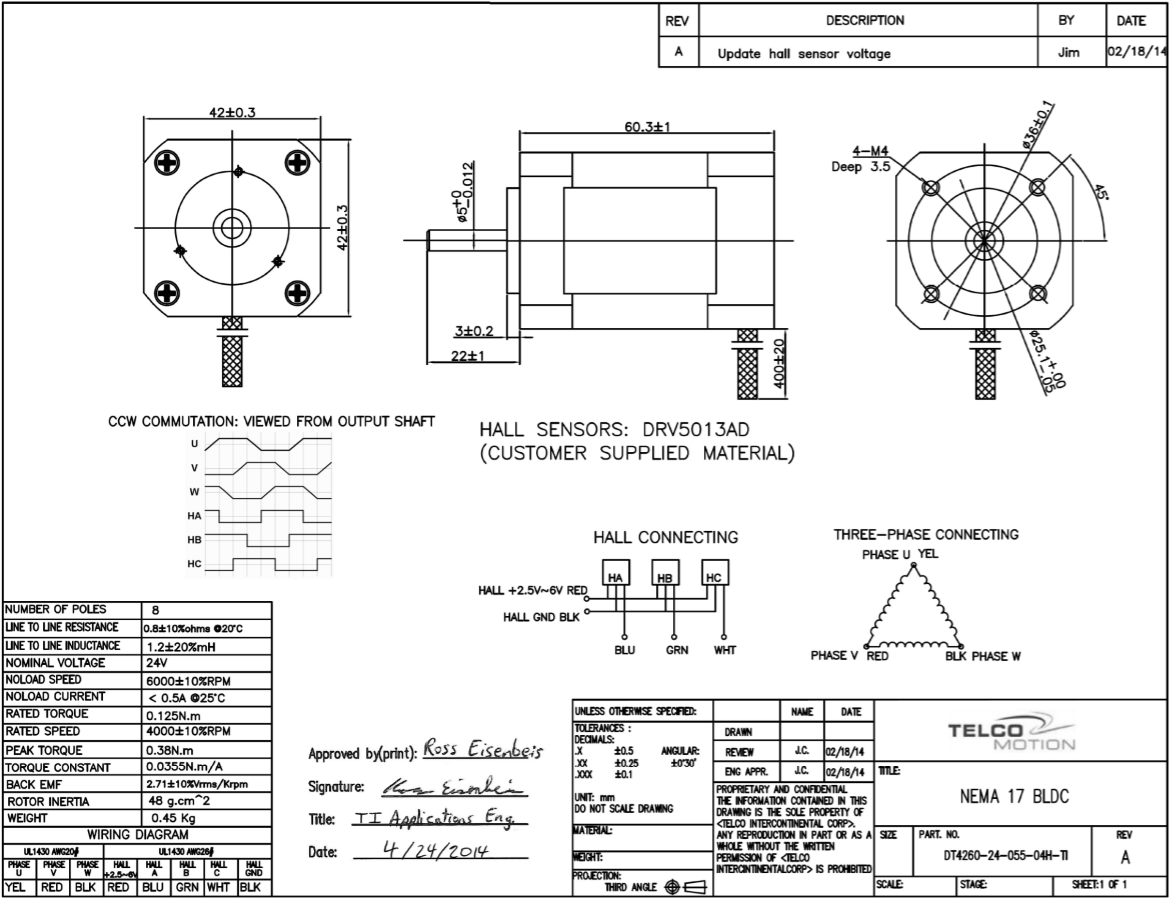


Fig.2: Motor Specs

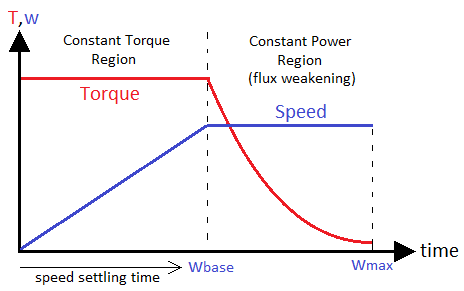


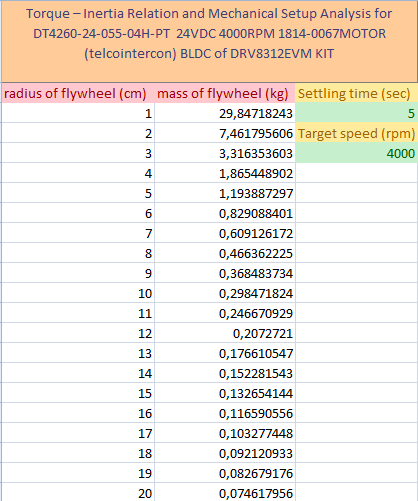
Fig.3: Desired torque-speed curve

The shaft torque (), desired speed and flywheel inertia () relation is given in below eq. Lets take the target speed as 4000rpm (418.87 rad/s) (rated speed of BLDC) for 5sec settling time. Rated torque of the BLDC is 0.125Nm.

The flywheel disc dimensions:

If we limited the radius as 0.1m,

Table.1: Flywheel calculation table



[DRV8312EVM Flywheel setup calculator.xlsx](DRV8312EVM%20Flywheel%20setup%20calculator.xlsx)