

# VisSim/Motion™ 7

## Motion Control System Design Software

VisSim/Motion is an easy, yet powerful solution for accurately modeling and simulating motion and motor control systems. VisSim/Motion consists of a comprehensive motion control block library, which includes motors, amplifiers, filters, controllers, loads, sensors, sources, and transforms. To design a system, simply select and connect the necessary components. Then, with the push of a button, you can run a simulation and view the behavior of your system.

### Block Library

#### Amplifiers (editable)

PWM Brush Amplifier (2 Quad)  
PWM Brush Amplifier (4 Quad)  
PWM Brush Amplifier (2 Quad-WCF)  
PWM Brush Amplifier (4 Quad-WCF)  
PWM Brush Servo Amplifier  
PWM Brushless Servo Amplifier

#### Controllers (editable)

AC Induction Motor Current Model (FOC)  
Commutator (Six Step)  
Microstep Controller  
PID Controller (Digital)  
PID Controller (Ideal)  
Field Orientated Controller (FOC)  
PWM (Dual Phase)  
PWM (Single Phase)  
PWM (Space Vector)  
Stepper Motor Controller

#### Filters (editable)

Low Pass Filter  
Rate Estimation (Rooftop) Filter

#### Loads

Rotational Load  
Translational Load

#### Motors

AC Induction Motor (DQ)  
AC Induction Motor (Machine Reference)  
Basic DC Motor (Permanent Magnet)  
Brushless DC Motor (BLDC/PMSM)  
Permanent Magnet Stepper Motor (2 Phase)

#### Sensors

Frequency Demodulator  
Hall Sensor  
Linear Encoder  
LVDT  
Rotary Encoder  
Rotary Position Sensor  
Rotary Servo Potentiometer  
Rotary Tachometer

#### Sources

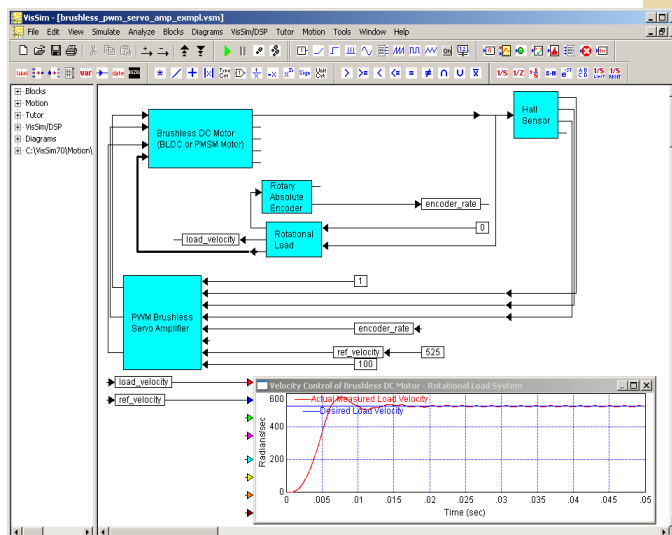
Three Phase AC Source  
Three Phase Square Wave Inverter  
Triangle Wave Generator

#### Tools

Discrete Integrator (editable)  
VCO

#### Transforms

Clarke Transform  
Inverse Clarke Transform  
Inverse Park Transform  
Park Transform  
Park Transform (Stationary Frame)



Velocity control using brushless DC motor.

### Highlights

- Drag-and-drop block diagram construction
- 40+ motion control blocks (See Block Library)
- Five high-fidelity motor models, including AC induction, Brushless DC (PMSM), and stepper motor models
- Rotational Load and Translational Load blocks
- Brush and Brushless PWM amplifiers
- Eight sensor blocks, including Hall Sensor, Linear Encoder, and Rotary Encoder
- Simple dialog box input to set or change block parameters
- Editable Amplifier, Controller, Filter, and Discrete Integrator blocks to simplify the creation of custom blocks
- Option available to enable editing of loads, motors, sensors, sources, and transforms

### System Requirements

- Professional VisSim 7
- 4MB RAM
- 20MB hard disk space

### Companion Products

- **VisSim/Analyze:** Linearizes nonlinear systems; performs Bode, root locus, and Nyquist analysis of continuous and discrete systems; and provides pole placement control design.
- **VisSim/Real-TimePRO:** Provides the capability to couple a system model directly with a real process or controller for real-time hardware-in-the-loop simulation and validation.