

Advanced motion control ...



Common software base and more than 20 years of software development



ServoWire SM eliminates the need for motion control boards by communicating servo information in real-time over an IEEE-1394 network.

ORMEC's MotionObjects Class Library and MotionObjects ActiveX control are based on more than 50 man-years of software development and years of continuous development of solutions for high-performance, time-critical servo motion applications.

This extensive background in difficult motion control applications has resulted in a wide range of advanced motion capabilities built into our software which will shorten your development cycle. Examples include:

- ✓ Time-based motion with a wide range of specification options, which save programming time and provide improved code documentation.
- ✓ Electronic gearing, with advanced fractional count algorithms proven in hundreds of applications.
- ✓ The ability to superimpose either geared or time-based moves on top of constant-ratio geared motion is particularly valuable in simplifying many high-performance, line-oriented motion control applications.
- ✓ Repeat motions that can be triggered within one position update cycle at the ServoWire® drive, and updated by the motion engine without necessary intervention of any kind by software at the Windows-level.
- ✓ Advanced user units that simplify program development, readability and maintenance.

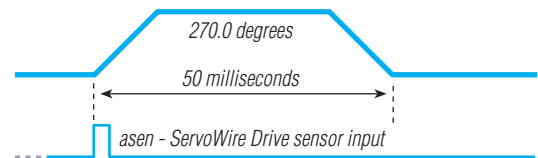
Registration Control

MotionObjects provides specialized software to keep an axis in register (or "in sync") with a key feature of the material under control typically detected using a high speed sensor. The axis motion is continually adjusted to compensate for variations in the actual distance between features on the material, pitch length (trending corrections), variations in desired axis position relative to the material, or the phase between the axis and material (instantaneous corrections).

Conditional Motions

All motion commands can include a trigger condition for synchronizing or interrupting the progress of a motion. Combining trigger conditions with high-speed ServoWire® SM Drive inputs provides a high degree of flexibility and control in synchronizing any motion command to machine operation.

Move axis for 2700 in 50 after asen

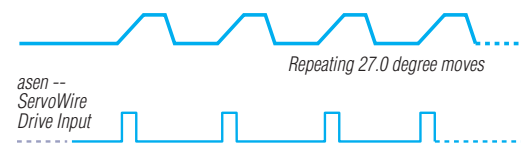


Sensor input, driven from a photo eye, starts a motion which is ready and waiting in the command queue.

Repeated Motions

Any motion command can be placed in the motion queue and automatically repeated without the need for additional application programming. MotionObjects allows multiple motion commands to be placed in the queue to form a loop which automatically repeats. Execution of motions within the repeat queue can be controlled using motion triggers.

Repeat move axis for 270 by 50, 10 after asen

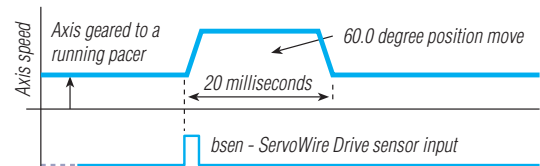


Sensor input, driven from a photo eye, repeats the move contained in the queue.

Superimposed Motion

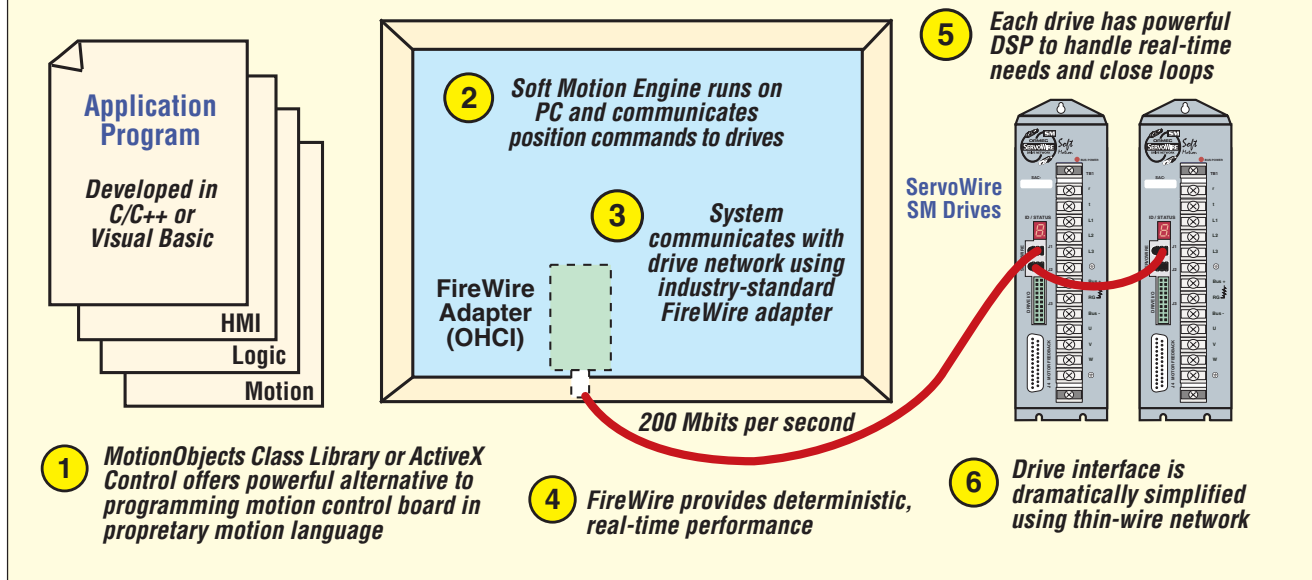
Superimposition is the process of combining a motion command to an axis that is already being driven by another source through a gear command. The command is added to the base geared motion referenced on time or distance traveled by the source axis. This functionality allows for phase changes between two axes which are lineshafted together.

Move axis for 600 in 20 after bsen



A sensor input, driven from a programmable limit switch (PLS), superimposes this motion onto a running axis. It modifies relative positions by 60 degrees at a precise point determined by the PLS.

How Soft Motion Architecture Eliminates Motion Control Boards



Events and Callbacks

MotionObjects provides software events and/or callbacks to coordinate program execution with machine operation. Events can be online, faults, alarms, inputs, sensors or boolean motion status variables.

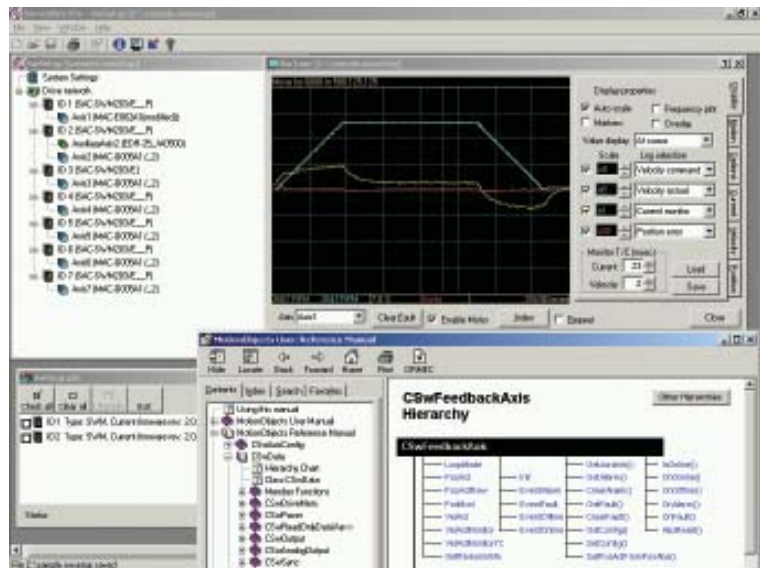
Motion Triggers

Motion triggers can be used to start and stop any motion, or initiate a change within one position loop update. Triggers can be specified as general or high-speed inputs, motion status boolean variables or application program variables. They can specify a "delay" or a "blinding" distance for use in registration applications (after acceleration and before deceleration).

Real-Time Data Logging

MotionObjects provides two types of data logging for monitoring and optimizing system performance. Logs are configurable for one-shot operation or continuous logging into a circular buffer. The data sample rate is software-configurable up to the loop update rate, and any number of non-drive variables can be logged. Up to four real-time variables can be logged from each drive -- phase current (U, V or W), bus current, bus voltage, position following error, commanded torque or velocity.

Data logging can be started and/or stopped using triggers such as general purpose or high-speed inputs, motion status booleans and application variables.



ServoWire® Pro

Overview: A suite of configuration, diagnostic and maintenance utilities for ServoWire® SM systems. ServoWire® Pro can run on the PC controlling the machine or a development computer.

- ❑ ServoWire Setup: Menus & software wizards to simplify configuration of ServoWire® SM drives.
- ❑ ServoWire Monitor: Diagnostic utilities for monitoring drive and network performance.
- ❑ ServoWire Tune: Tuning scope and software for optimizing motion performance.
- ❑ ServoWire Upgrade: Tools for upgrading ServoWire® SM drives to latest firmware.